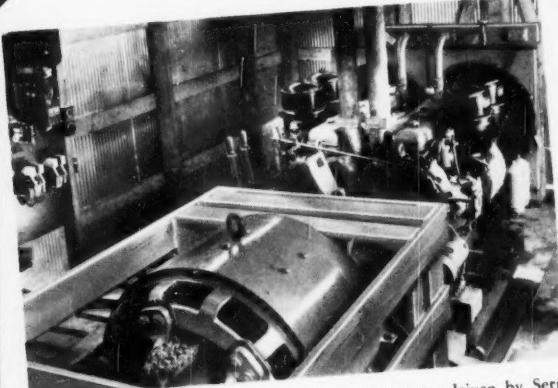


# COAL MINING

MAY, 1950

"The Picture-Book of the Industry"

VOLUME 27, No. 5



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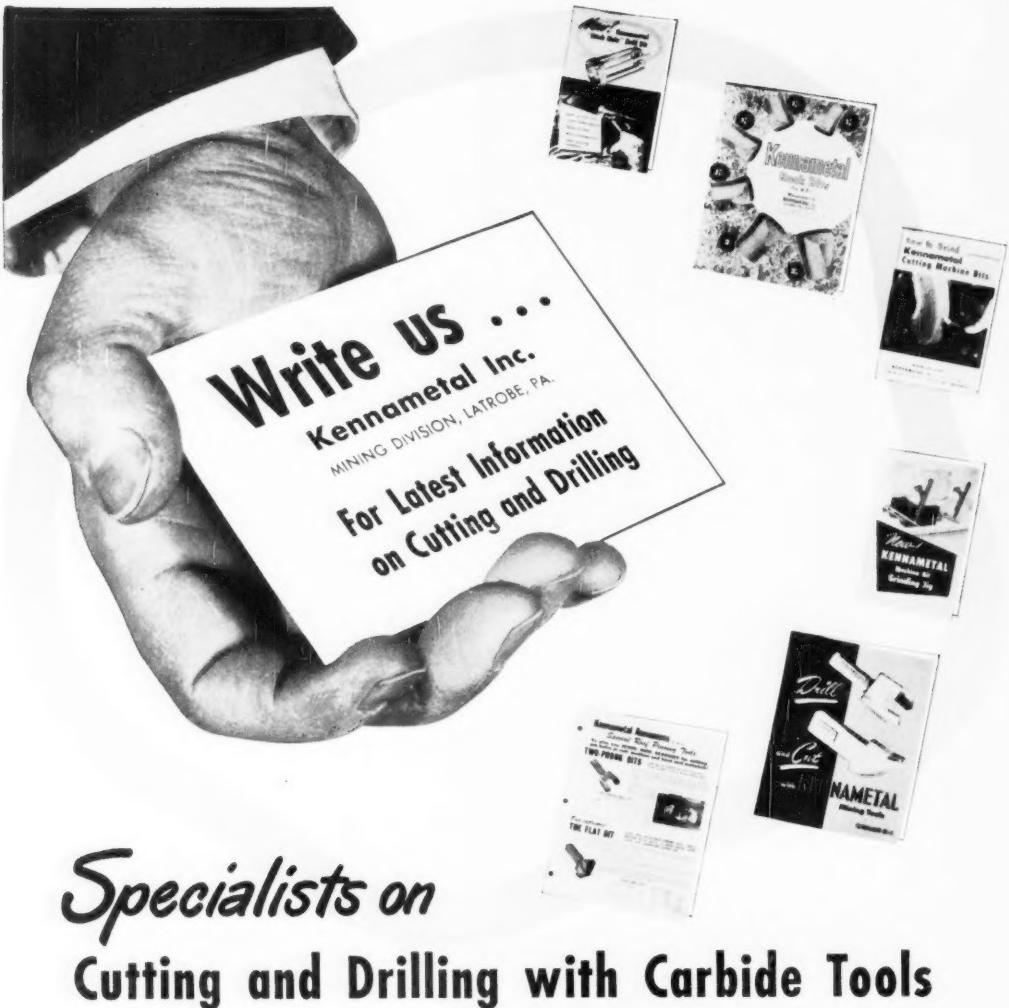
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# COAL MINING

Vol. XXVII

MAY, 1950

No. 5

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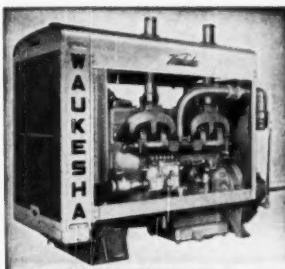
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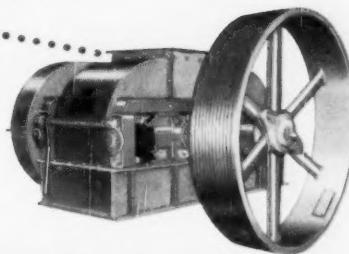
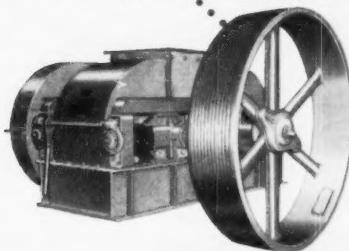
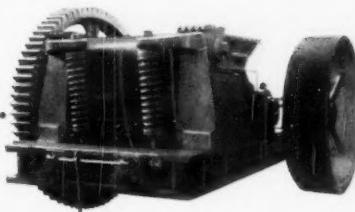
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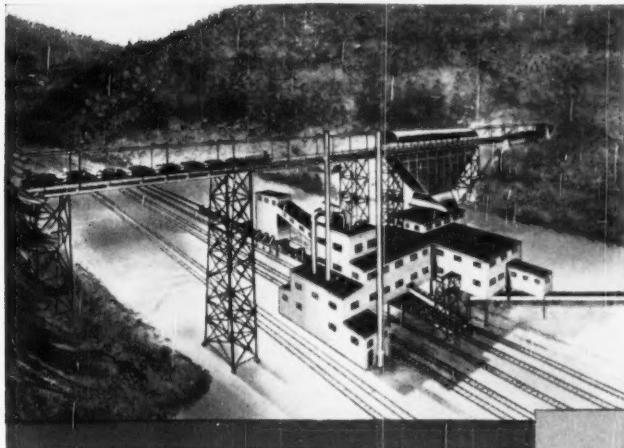
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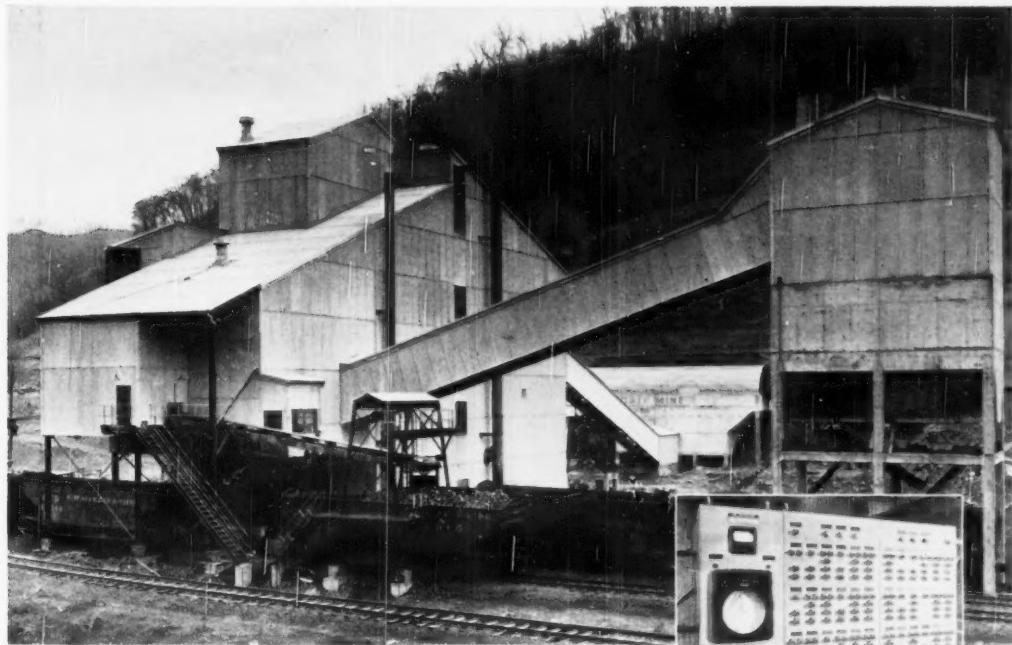


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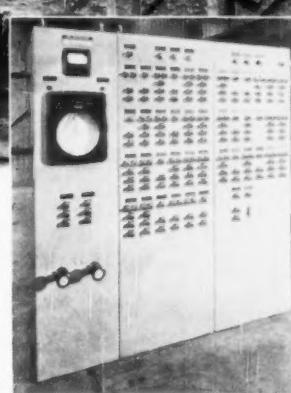
# PUSHBUTTON PREPARATION PLANT

Engineered and Constructed by Roberts and Schaefer Co. at

HENDRIX MINE

This modern pushbutton preparation plant, constructed at the Hendrix Mine of the Consolidation Coal Company (Ky.), division of Pittsburgh Consolidation Coal Company, near Jenkins, Kentucky, is typical of all Roberts and Schaefer profit-producing plants. It's typical because of its functional design and the operating efficiency of its automatic and semi-automatic equipment.

A closer look at the photograph above reveals that there are no windows. But, windows are not needed—this R & S plant is equipped throughout with artificial ventilation and daylight lighting. Each minute detail of an R & S-constructed plant is designed to give complete satisfaction and the greatest possible profit to its owner. The result: Premium Coal at Premium Prices.



Control Panel which acts as "nerve center" for many of the automatic and semi-automatic operations of the Hendrix Mine plant.—Entire control layout by Roberts and Schaefer Company, manufactured by Westinghouse Electric & Manufacturing Company. Photographs: Torkel Korling.

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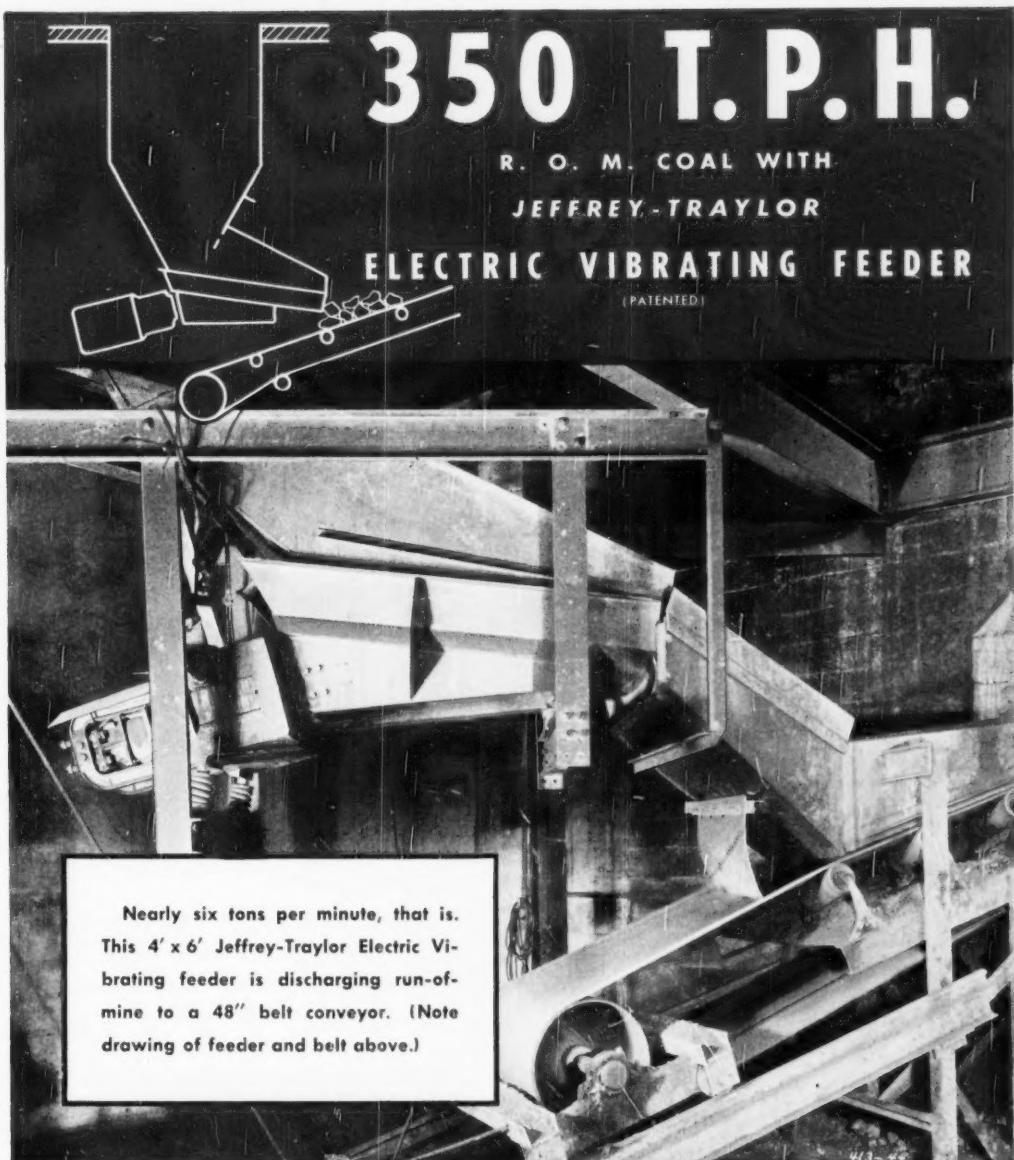
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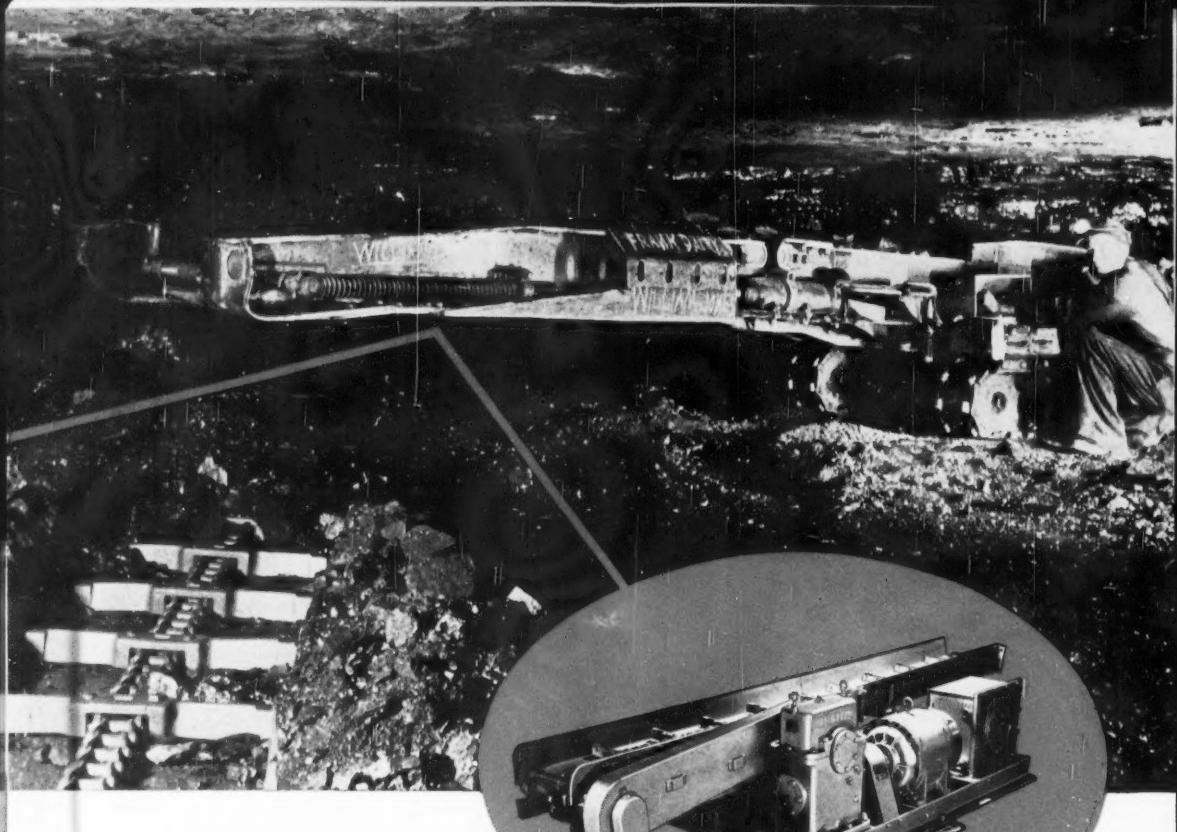
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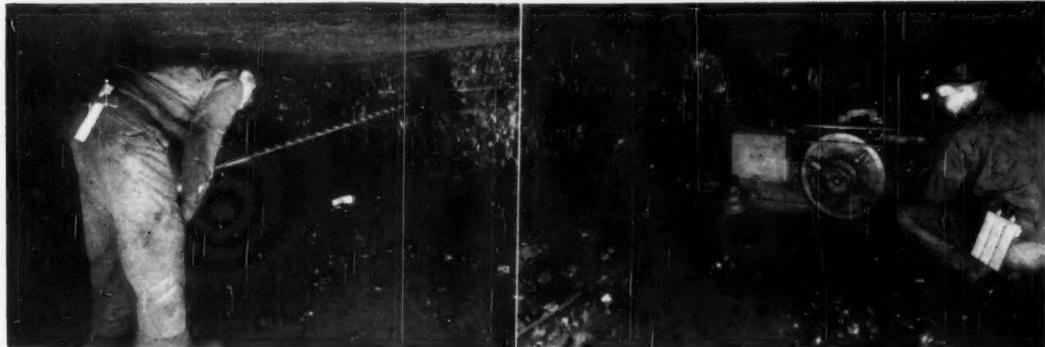
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Drilling is done with one man hand held electric drills.

The 35 BB Jeffrey cutting machine in operation.

## Powell Coal Company Modernizes Small Mine To Meet Present Day Marketing Conditions

The Powell Coal Company Mine was open with the intention of producing coal and delivering it by motor truck to the local domestic trade. The mine was opened on State Highway Route 66, about 3 miles northeast of Kittanning, Pennsylvania. The coal averages 42" in thickness and belongs to the Upper Freeport seam which lies level on this property. The roof is good and the bottom is hard. Coal in the seam on this property is surrounded by lower ground and the mine is non-gaseous.

When this mine was opened, all loading was done by hand. As business increased, additional hand loaders were employed until the number reached 52. Then some mechanical mining was tried

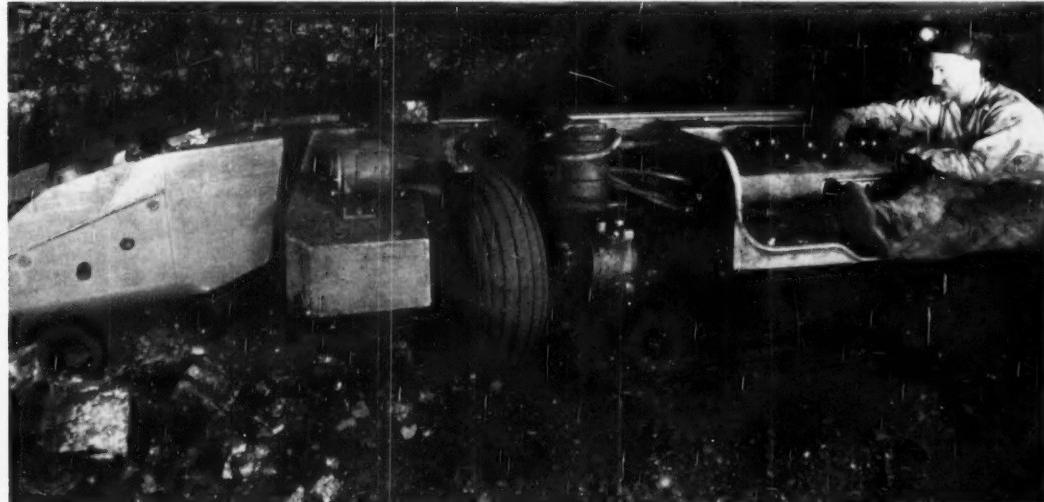
by installing new Duck Bill Loaders and Shaker Conveyors. The Modernization Program incorporates a Jeffrey 61 CLR conveyor loader which has a 12 foot extendable gathering head that permits loading out all coal from the cut while the discharge end is anchored above the room conveyor, which feeds in turn onto a Jeffrey 61-EW Elevating conveyor for loading into mine cars.

Cutting is done with a Jeffrey 35-BB equipped with a 7½ foot cutter bar and Kennametal bits.

The conveyor loader is rubber tire mounted for easy trammimg. All controls are in the operators compartment within easy reach of the operator while he is facing in either direction.

Gathering and discharge conveyor chains are driven mechanically from an electric motor, which is push button controlled. An emergency push button is also provided in a control case at the rear of the machine. Instant and accurate response to all other operations is assured by hydraulic power. Having the discharge end anchored, the operator concentrates on the loading end and works more safely. Its discharge end is anchored over the room conveyor by a hydraulic jack. The two rear rubber tire wheels are then raised to allow pivoting. The wheels at the front end are turned inward to allow the loading end to travel across the face of the

(Continued on page 27)



The Jeffrey Model 61 CLR conveyor loader loading a cut in pillar work.



## NEW HYDRAULIC ROOF-BOLTING DRILL SHOWS IMPRESSIVE PERFORMANCE

A new tool for the mining industry shows promise of cutting time and costs of drilling holes for roof bolts. Experience in the field indicates that the Joy RBD-1 may cut costs as much as 50% where rotary drills are applicable. (Bureau of Mines estimates state that 60% to 65% of the roof overlying U. S. coal beds may be drilled with rotary-type machines.)

Early in December, 1949, the RBD-1 was put into service in the Lower Thacker seam of Southern West Virginia. The seam averages 43-46" in thickness on this property. Roof consists of laminated slate bands. At present each cut is supported by eight 42" bolts, set approximately on 4' centers. Safety posts are set along the ribs to within 20' of the face as an added precaution.

In the six months that the drill has been operating, several time studies have been run. These show that the RBD-1 crew can consistently drill and

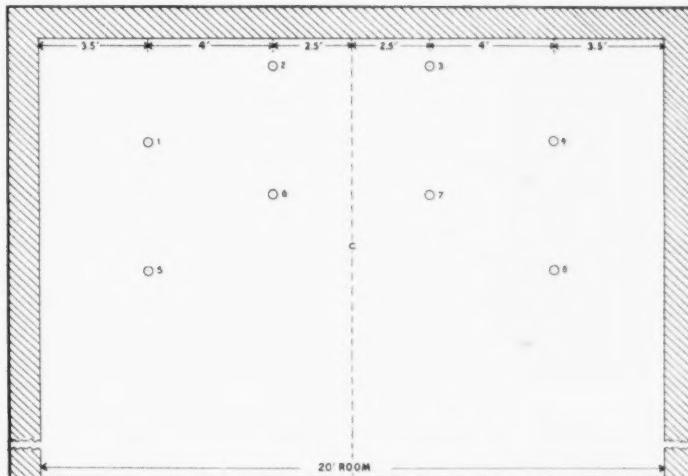
bolt a place in 22 minutes, or 14 places per shift. Two men are used, one drilling and one setting the bolts. In adjacent sections of the mine, four-man crews are using hand-held electric drills. They require 33 to 40 minutes to drill and bolt a place, thus can handle only 8 or 9 places per shift. Experience under comparable conditions indicates that three men with a stoper and self-propelled air compressor can set 9 to 11 places per shift.

Sequence of operation in this mine is as follows. The operator trams the RBD-1 to the working place and parks it in the center of the room with the end of the boom 6" back from the coal face. He then sets the brake and checks to see that trammimg and steering valves are not cocked. He goes to the face and swings the boom to the left until it is in position to drill hole No. 1. The section boss has previously painted five lines on the roof; a center line, two lines 30" on either side of center,

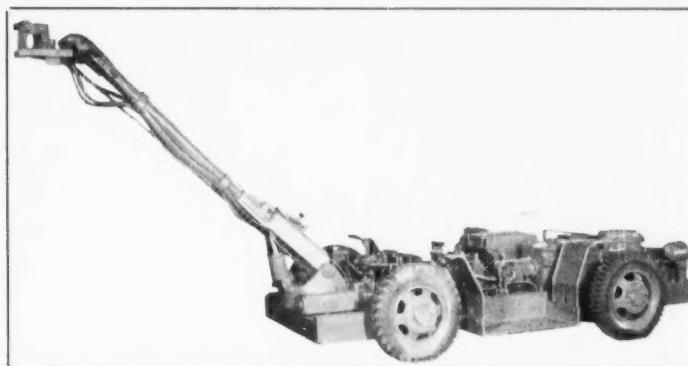
and two lines 78" on either side of center. It is thus a simple matter for the operator to locate the drill. After the operator has drilled Holes 1, 2, 3, and 4, the machine is trammed 4' further back from the face and Holes 5, 6, 7, and 8 are drilled. The helper in the meantime is setting the bolts as soon as each hole is finished. When the place is set, the boom is centered in trammimg position and the machine moves on to the next place.

Drilling is accomplished as follows. The first steel is placed in the drill and the boom is raised until the bit touches the roof. The rotation is set, but the operator controls drill feed. A little pressure is applied as rotation is started. Rotation is left on and the feed is adjusted to take into account the varying hardness of the different slate strata encountered. When the length of the first steel has been drilled the boom is lowered, while rotation is continued to

(Continued on page 33)



The drawing illustrates the roof-bolting plan in use. Eight bolts are set per cut. For added security, safety posts are set along the rib-line to within 20' of the face. Bolts are set with a hand-sledge. A socket wrench is used to tighten the nuts.



This photograph illustrates the new, Joy RBD-1, a self-propelled, all-hydraulic roof-bolting drill. The machine is available in 26", 30", and 36" heights and may be used in seams up to 8½ feet thick. All models may be equipped for wet drilling or with vacuum dust collector, as desired.



The RBD-1 is steered hydraulically and is equipped with dual controls for ease of operation. Boom swing may be controlled from the operator's seat, to facilitate tramping. Since a standard drill-boom is used, the machine may be quickly converted in the field to a standard coal drill, should improving roof-conditions make roof-bolting unnecessary.



## "CEMENTED CARBIDE TIPPED BITS" THEME AT CENTRAL W. VA. COAL MINING INST. MEETING

By R. H. JOHNSON

Whenever the American Army or Navy men mixed with the soldiers and sailors of other countries, they showed one trait that the foreigners could never get accustomed to nor understand. Our boys always had something that they would complain about and the others, who in their case would shrug their shoulders and put up with discomfort as a matter of course, could not comprehend the griping of the Americans. "What's the use?" has never been an American answer to trouble, but rather "Let's raise Hell and maybe we can do something about it." You will notice I quoted "Maybe we can do something about it;" not "Maybe they will do something about it."

Most people do not realize how valuable this attitude is in the whole of American philosophy. In the past we have been trained to self reliance as individuals, as groups of engineers, as employers, as labor organizations, as industries, as Americans. That attitude of self-reliance and resourcefulness has shown more tangible results in the coal industry in America in the last gen-

eration than in any other industry or any other country.

The Jacksonville agreement that was imposed upon the coal mine producers of the middle west in 1926 caused more griping in the industry than the New Deal or the Blue Eagle or the Wagner Act. But the problems that it raised were attacked with energy and skill, and the high wages were eventually justified by making it possible for the miner to produce more tons with no more physical effort; and do the job in a safer manner, through coal mine mechanization.

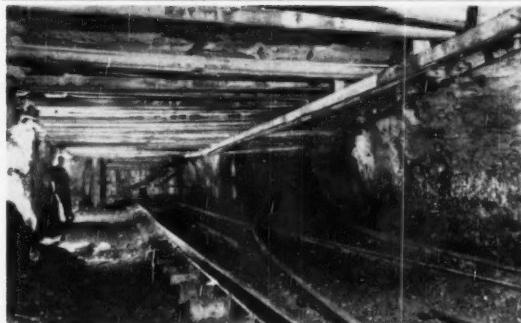
Last Fall I talked to two men who have recently visited England to learn the effect of socialization of British mines. Over there they do not call it "mechanization" but "adoption of labor saving devices." Under their new plan, which of course is actually as old as time but new only to them, anything that will save labor is a sin and a crime and must be condemned. The socialist program of making work and using as many men as possible just to keep them on the pay roll, will last only as long as

it is supported by Marshall Plan dollars from American industry where, in spite of the welfare state planners, the tradition of free enterprise and high living standards still prevails.

A friend of mine recently wrote me from Japan and told me that one of the largest Japanese coal mines produces 4,000 tons of coal per day with 11,000 men on the pay roll. At a labor rate of \$15 per day this would make the direct labor cost of this coal \$41 per ton in this country. Putting it another way, if the cost of labor per ton were held at its present level in America but with a production of only 700 pounds of coal per man day, all the coal miner could hope to earn would be 87 cents a day, and we would need 5 million more coal miners than we now employ.

This illustration shows why it is that the United Mine Workers organization, which certainly wants high earning rates for its members, wants to preserve a high yield of production for the miner and to that degree at least favors the technological development of improved methods of mining.





Hitch Timbering with 2" pine and steel cross bar in coal and rock at Cambria Clearfield Mining Co., St. Benedict, Pennsylvania.  
No. 1584-A Kennametal Inc.



Hitch Timbering with 2" pine and steel cross bar in coal and rock at Cambria Clearfield Mining Co., St. Benedict, Pennsylvania.  
1-4-50 No. 1584-B Kennametal Inc.

1-4-50

You are all familiar with the development of continuous mining and loading machines. There has been considerable publicity attending the marketing of two models of machines that cut the coal out of the solid and load into shuttle cars, mine cars or conveyors. Three other machines of this general type are also now in use and three more that I know of are well along in process of development.

One machine that can replace in one operation the jobs of cutting, drilling, blasting and loading has been the goal of development engineers for 50 years; and we now know that this equipment is already in successful use. Ahead of us lie the various refinements that make for flexibility, ease of control, safety and reliability.

We are now at the point where we shall have to project the future workings of our mines to accommodate them to the cycles of continuous operation at one face. A part of the definition of a continuous mining machine is that it stays and keeps working in one place.

How far shall we drive this face? How will we ventilate it? How shall the coal be taken away behind it? How can we deliver supplies such as timber and brattice material to the face? How will we keep power up to the machine

and will we use direct or alternating current? What shall we do about water lines for spray use? How shall we drive cross cuts for ventilation? How shall we timber a place that is steadily advancing? How shall we handle lubrication and maintenance of a machine that must approach 100 per cent operating time?

The continuous mining machine is a very good example of what is needed in any machine to produce good results. First we must have good machine design, proper material and good workmanship. We must have an adequate power supply and a skillful operator.

Up at the business end of the machine, on the cutting arms or chains we must have a good bit. The actual heart of the operation is that job of freeing the coal. Gathering, elevating and conveying are all incidental to the getting of the coal in the first place. One of the delays involved in this operation is the time consumed in changing bits when they are dull or broken. Add together all the charges for overhead, depreciation, power, maintenance, materials and labor, and divide by your expected operating minutes in a shift and you will find that delays cost very close to a dollar a minute. And yet, it is cheaper to

change bits frequently than to operate with dull or damaged bits which consume power and cause work to be done at less than normal and proper rate. A test with an Esterline Watt-hour meter will demonstrate this in any chain machine, especially when supported by time studies to show the effective work performed.

Cemented carbide tipped mining machine bits and drill bits, which retain their sharp cutting edges longer than any steel or otherwise hard surfaced bit, have already proved their superiority and cost advantage in mines all over the world. The story of cemented carbides, however, does not end there. These carbides vary in wearing qualities and in resistance to shock just as coal varies in B.T.U. and ash content. Coals with high B.T.U. and low ash content are known as premium coals and you men spend a great deal of money and effort to produce and ship a coal of uniform high quality. Kennametal cemented carbides differ from all other carbides because of the unique processes of refinement that produce materials that have a closer control of grain size and greater freedom from inclusion of impurities, than those of other manufacture. The difference is not only in skill of manu-



Using a stoper to drill roof bolt holes at Eastern Gas & Fuel Co., West Virginia.  
No. 1545 Kennametal Inc. 12-1-49



Using D-1-3/8 Bits and PR Rod to pin boney at Leechburg Mining Co. Kennametal Inc.  
No. 1449-A 8-15-49



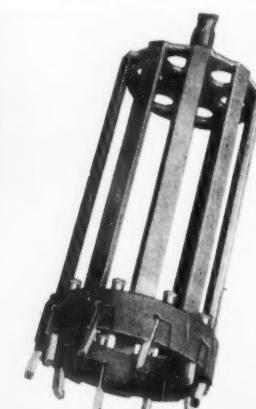
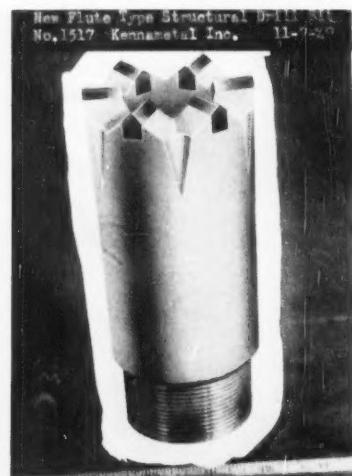
facture and degree of laboratory control but inherent in the process of vacuum furnace sintering which is a Kennametal development. Therefore, it is no more correct to say that carbide is carbide than to say that coal is coal because it is black and will burn. These processes of refinement are expensive but we find that they are justified through better performance, even at what in some cases is a higher unit price.

Another of the problems of the continuous mining machine is that of supporting the roof without delay to the machine. The roof bolting methods now widely advocated and accepted appear at present to offer an excellent solution for timbering for continuous mining machines. The principle of getting a firm support in place before the strata above the coal have time to sag is one that can fit in well with the new method of mining. Since there is no damage to the roof by blasting against it to bring down the face of coal and since the

rate of face advance is expected to be about 10 feet per hour, permanent timbering can be done behind the machine with only two to three hours of exposure of the roof before it is made secure. In many cases it will be found necessary to provide support over the machine to protect the operator and helper against local roof falls. It is believed that this can be done by use of light metal cross bars set on roof jacks as the face advances; these being taken out behind the machine after permanent bolts are in place and moved forward for resetting at frequent intervals.

The original tests of roof bolting in coal mines were naturally attended with some failures. Part of this is because as Charles F. Kettering observes, all the work was being done by amateurs, and an amateur is simply a fellow who is doing a thing for the first time. After the experiment works fairly well and its theoretical basis is established, comes the time for refinement and tech-

nical improvement. We know that we can bolt together several thin beams and make one very strong beam. But if a bolt is not anchored properly and holds only on one end we don't have the beam bolted. There are several ways to do this in a mine roof, but none of the bolts will hold to the limit of rod strength if the wedge or the expansion shell is anchored in a soft and easily compressible stratum of clay or shale. Perhaps you do not need the full rod strength. A  $\frac{3}{4}$  inch mild steel rod has a yield strength around 20,000 p.s.i. and therefore will support nearly twice as much as an average mine prop in 6 foot coal. The diameter of these holes is important and should not vary for any type of attachment more than  $\frac{1}{8}$  inch and in some types not more than  $\frac{1}{16}$  inch. The size of hole most commonly used is  $1\frac{3}{8}$  inch for the expansion shell type and  $1\frac{1}{4}$  inch for the split rod and wedge. We make four types of bits for drilling these vertical holes in the roof, each of which is best suited



Kennametal Hitch Hole Bit  
No. 1462 8-24-49





for its particular condition. Where the roof is a massive sandstone or limestone the only rotary tool that will work is a diamond drill, so for that condition we offer a percussion bit for stoper or jack hammer use with portable compressor air supply. Since compressed air is a luxury in the average coal mine, and since rotary electric drills are in common use for drilling blast holes in the coal, it is better to drill for roof bolting with rotary tools if you can. If the roof is a soft shale it can be drilled with a regular cemented carbide coal drilling bit. If it is harder, the prongs of the bit may have to be shortened for strength. If quite hard with sandy layers, a heavier single blade bit may be required, which we call the type FD or flat bit. We use drill rods without any conveying scroll for these vertical or high angle holes and provide them with chucks to hold the bits and shanks to fit the auger socket of the drill. We call these roof pinning rods. Sometimes in wet conditions we find an auger necessary to pull the cuttings out of the holes.

A new wrinkle in roof bolting has come to light in western Kentucky where acid water has enough free sulphuric acid in it to eat up a steel bolt very quickly. Sterling Lanier who is President of the Norton Coal Company has been successful in developing the use of wooden pins. He uses 2½ inch diameter oak pins, split at the ends and tightened in 3 inch holes, with a narrow cap board wedge in each end. These oak pins are holding a roof that could not be held by cross-bar timbering on 30 inch centers.

The vertical drilling of holes with post mounted drills and with self-propelled hydraulic drills is readily adapted to the equipment at hand. But to do this job with hand-held electric drills or jack hammers in high or low coal is a tough job, without some help from the Master Mechanic. For air drilling two companies, Joy and Le Roi, have developed short leg stoppers especially for use in roof bolting where limited head-

room is available. Two of the mining companies have developed attachments to roof jacks which can elevate a jack hammer while the hole is being drilled. One company has built a skid mounting for a post drill to hold the column erect, without requiring a top arm for a roof anchor and using a short thread bar. Consolidation Coal has built a light post with a cradle mounting for a hand-held electric drill which with two rubber wheels becomes a wheel-barrow for moving, and which uses a winch to elevate the drill. Another company is building mountings of this general type for use with your hand-held drills; to help solve this problem in roof bolting.

When I meet someone new and he asks me what my job is I tell him that I am a bit peddler. At first this may sound unimportant, but it is not. It is important to me of course, but it is also important to you. Kennametal bits are not just bits but are the most costly bits for coal mine service that are made anywhere in the world. All of the expensive mining machines and drilling machines that you have are designed just to make these bits cut and drill, and the bits are in there doing it. If they can do a job just a few per cent better or faster than any other tools, you can afford to use them if they cost twice our present prices. Similarly, if they do a job a few per cent better at our present prices, you could not afford to use other bits if the makers gave them away. It only takes a few per cent in man tonnage to make the difference between red and black ink in your operating cost. If you wind up too many times with a red ink figure you go out of business; unless of course your business is run by the government, which is now designed solely for red ink operations.

England uses some of our bits but theirs will never be an important market because they run a red ink industry, like our Tennessee Valley Authority, Rural Electrification Administration, AAA, RFC and so forth. If the socialist planners have their way in

America, and take over coal mines, railroads, power companies, insurance and so forth, there won't be much need for Kennametal because cost and efficiency will no longer be important. And let me tell you in all sincerity, it is later than you think!

Socialism has failed in England, by the admission of the socialist government leaders, as far as voluntary compliance is concerned. It has now reached the stage where compulsion is needed and it has already begun. Many farmers have been dispossessed from land their families have owned for generations because they have failed to produce a quota. No longer can a man move from one job to another on his own choice. The government tells him where to work and where to live and he complies or goes to jail. The rich and the successful proprietors of business and the job producers have been liquidated; and the workers are condemned to a starvation diet and government confiscation of a large part of their earnings.

In America an association called Americans for Democratic Action has gained control of the Democratic party, the CIO, the AFL; and now has 75 chapters in 48 states, with 100 student affiliated groups. This was formerly headed by Leon Henderson. The present national chairman is Senator Hubert H. Humphrey of Minnesota. Some of the men in this outfit are communists, but it is not the communists that we have to fear. Rather it is the national socialist planners (who by the way never use the word "socialist") who seek to build an all powerful state and subject the people to slavery. The headway they have already gained is tremendous.

We need to remember that "there ain't no such thing as free lunch."

We should know that this present administration, since the end of the war has spent more money in four years than all of the previous administrations from 1789 to 1941. They could not do this if we were on the gold

standard. This would be impossible if we were on the gold standard. A paid-up life insurance policy worth \$10,000 ten years ago is now worth \$6,000. The war bonds that you bought early in the war are worth less than you paid for them in terms of what that money will buy. Congress has already spent all of the social security dollars that have been deducted from your pay, and will have to find new tax dollars to pay you after you are 65 in dollars that then may be worth a dime apiece.

The Brannan farm plan to support farm prices and give the housewife cheaper food is copied directly from the British socialist plan now in operation in England, where 40 cents of every workman's dollar is taken by the government.

I strongly recommend that everyone here buy and read a book entitled "The Road Ahead" by John T. Flynn, distributed by the Committee for Constitutional Government of 205 East 42nd Street, New York 17, N. Y. I have one of these books here for you to see. They can be bought for \$1.00 each, or in quantities for 50 cents. It unveils the socialist plot to capture America. It tells of 75 societies that these planners have organized to spread propaganda among our negro population, of the attack organized within the Federal Council of Churches of Christ in America whose membership includes 142,000 protestant churches with 27 million members, of organized propaganda in the universities, press, radio and movies; and it suggests what we can do about it if we want to stay free.

One of the things that would stop these vultures in their tracks would

be a return to the gold standard of money, together with a law to prohibit deficit spending. I have here for distribution some literature published by the Gold Standard League of America, of which our company president, Philip M. McKenna, is the National Chairman.

I would like to close these remarks with a poem about coal miners that I have called "Reflections in a Dinner Bucket." I have been a coal miner and this expresses my idea of the breed. I do not want to see them reduced to a group of slaves working under the tyranny of socialism.

I wonder what the weather is outside.  
The pit boss says it looks again like snow.  
Or has the sun turned everything to slush,  
Or is the north wind coming on to blow.

The weather here is always just the same.  
The air is always fresh and clean and cool.  
Just right to work in. I can hardly blame  
The kids complaining of their stuffy school.

Here there are dangers that we may not scorn.  
We do not fear them though we know them all.  
We face them; and we take time out to warn  
Each other that one error means a fall.

We guard against the slowly creeping gas;  
We watch and keep away from moving trips;  
We crouch beneath the power lines that pass  
Above our heads. We watch the roof that rips.  
The roof that rips and warns us with its cracks,  
The roof that slowly sags and quickly breaks.  
That ever-present hazard at our backs.  
Our ears are turned to every sound it makes.

We have a pride of workmanship as keen  
As you have ever found, or ever will.  
We strive to keep a uniform routine  
While nature's unknown forces try our skill.

We work among the bowels of the earth.  
We like it. And we like to think that we  
Are kin to those that bore that greater birth  
And launched the good ship of Democracy.

So when we ask about the day outside  
We ask as free men wanting none of it  
Until our shift is over and we ride  
The man trip. Then we feel a certain pride  
In well done work, that can not be denied.  
I wonder what the weather is outside.

E. H. Johnson



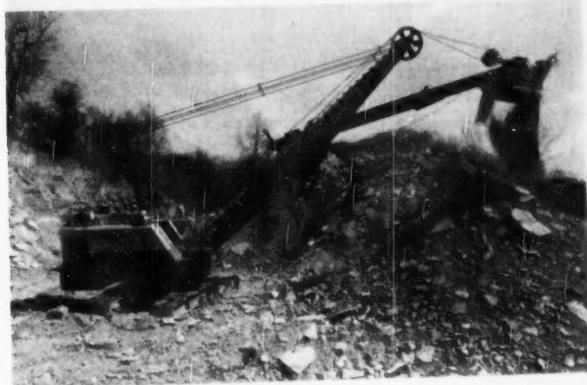
Joseph T. Berta, President, Pennsylvania Coal & Coke Co., at NCA Meeting, Hotel Washington, Washington, D. C., February 2, 1950.



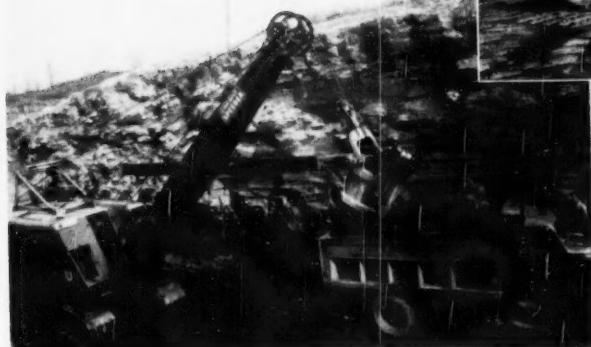
J. Atlee Schafer, left, President of the American Retail Coal Association, is shown being interviewed by Albert L. Warner, noted Washington radio commentator, on the subject, "Does the Coal Crisis Threaten National Health and Safety?"

**RIGHT:** Vertical type McCarthy drill using 6" and 8" auger at the Jefferson Coal & Coke Company in southwestern Pennsylvania making 30 to 60 foot deep shot holes through shale and sandstone. It drills from 400 to 1000 feet per day. Borium tipped bits are used in shale. Kennametal heads and finger-tipped bits in hard sandstone.

**BETWEEN:** This Marion Model 111 M Shovel is stripping overburden off the Sewickley seam of coal at the operation of the Luxnor Coal Company, in the extreme Southeastern end of Greene County, Pennsylvania, near the town of Taylorville. The Luxnor Coal Company has also stripped the Pittsburgh seam on this same property and is deep mining the high walls with Joy loading machines and shuttle cars.



**RIGHT:** A New Model 1006 highlift Dsgood shovel having 45 foot boom, 35 foot stick and 2 cubic yard dipper stripping overburden off coal at Operation of Morrone Brothers at Starford, in northwestern Indiana County, Pennsylvania.



**LEFT:** Link-Belt Model 107 shovel having a 30 foot boom, 25 foot stick, and 1 1/2 cubic yard dipper loading coal at the Dipple & Dipple Coal Company near Morgantown in Northern West Virginia.

# CONSOLIDATED (W.Va.) SAFETY AWARDS

The Consolidation Coal Company (W. Va.) Division of the Pittsburgh Consolidation Coal Company held a Safety Awards Banquet for the year 1949, at the Fairmont Hotel, Fairmont, West Virginia on March 26. Awards were given for safety records ranging from 1 year to 10 years, as in the cases of Charles Wilson who has a 9 year record, and Joseph Knight who has a 10 year record. In this group representing Mine 38, with a 2 year record is R. W. Davidson, who holds the world's production record for mechanical loading. Awards presented consisted of Lapel Buttons for records of 1 year to 5 years and Government Bond for records running from 6 years to 10 years.



Representing Everettville Mine, left to right. Albert Powell, seven years—Bond. W. H. Zickefoose, seven years—Bond. Arthur Trowbridge, one year—Lapel Button. John Ryan, one year—Lapel Button. Edward Barry, one year—Lapel Button. Steve Kish, one year—Lapel Button.



Representing Mine 32, left to right. Clyde Morgan, 8 years—Bond. E. L. McCoy, 6 years—Bond. Lowell Kelly, 6 years—Bond. Millard McGown, 6 years—Bond. Joseph Knight, 10 years—Bond. Lawrence Wright, 6 years—Bond. Charles Wilson, 9 years—Bond. Lewis Akers, 6 years—Bond. Samuel Vangilder, 6 years—Bond. Joseph Germondo, one year—Lapel Button. Herman Patterson, two years—Lapel Button. French Richards, one

year—Lapel Button. Lewis Stentz, one year—Lapel Button. Charles R. Witt, Robert Bates, two years—Lapel Button. Warren Wilson, one year—Lapel Button. Raymond Comer, two years—Lapel Button. Harold Snodgrass, two years—Lapel Button. Charles Teets, two years—Lapel Button. John Knoble, four years—Lapel Button. Vergil Mackey, four years. Damon Monmirth, four years.



Representing Mine 97, left to right. Marvin Hamrick, seven years—Bond. Frank Barry, one year—Lapel Button. R. E. Bragg, three years—Lapel Button. Bazel Kaminsky, four years—Lapel Button. Galen Kyre, five years—Lapel Button.

Representing Mine 93, left to right. Harry Turner, five years—Lapel Button. Paul Zickefoose, one year—Lapel Button. Charles Groseclose, 9 years—Bond. Lawrence Ross, one year—Lapel Button. Earl Tinder, three years—Lapel Button. George F. Reynolds, three years—Lapel Button. Frank Collier, four years—Lapel Button. Bert Farance, four years—Lapel Button. Foster Turner, four years—Lapel Button. William Meyers, four years—Lapel Button. Fred Rundle, five years—Lapel Button. Richard Rundle, five years—Lapel Button.



Representing Mine 38, left to right. R. W. Davidson, two years—Lapel Button. Howard Wills, 3 years—Lapel Button. Raymond Louge, 1 year—Lapel Button. Ira Davis, Joseph D. Ellis, one year—Lapel Button. J. M. Morrison, one year—Lapel Button. David Mainella, two years—Lapel Button. Americo Beccaloni, three years—Lapel Button. Eugene Leiven, four years, Lapel Button.



Representing Mine 63, left to right. George R. Cain, two years—Lapel Button. Lloyd M. Fleming, one year—Lapel Button. Lloyd N. Van Pelt, two years—Lapel Button. Thomas Dean, two years—Lapel Button. W. F. Rogers, four years—Lapel Button. Ralph Mick, two years—Lapel Button. P. W. McGraw, one year—Lapel Button. Charles Spragg, one year—Lapel Button.



Williams Mine. Frank Cunningham, three years—Lapel Button. Edgar L. Zustan, one year—Lapel Button. Homer Fettey, two years—Lapel Button. Joseph Piteleski, one year—Lapel Button. James G. Thompson, four years—Lapel Button. Baxter Winner, four years—Lapel Button. Rex Wright, three years—Lapel Button. Edison B. Wilson, six years—Bond. Paul Rife, one year—Lapel Button. Warren McDougal, two years—Lapel Button. Arley A. Haines, two years—Lapel Button. J. G. Bowers, one year—Lapel Button.

Representing Mine 25, left to right. Earl C. Lynch, seven years—Bond. H. A. Thorne, four years—Lapel Button. Sylvio Pellegrino, two years—Lapel Button. Paul W. Anderson, five years—Lapel Button. Donald Alvarez.

## Old Faithful

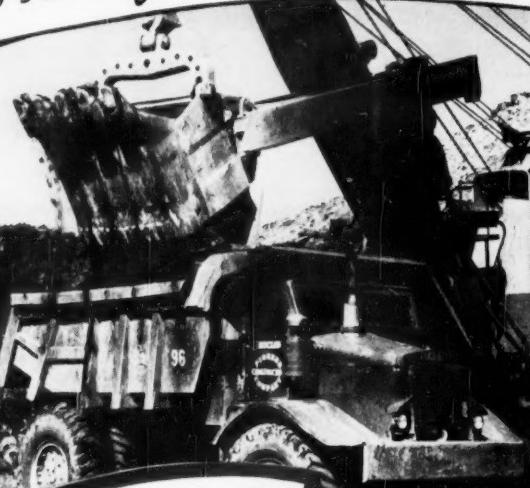
Old faithful was built in the year 1926 and was shipped from the factory to the far west to move rock overburden. In 1934 this shovel was moved to the Frances Mine of the Baton Coal Company in Washington County, western

Pennsylvania and has been operating winter and summer ever since. It is estimated that this shovel has moved between 14 million and 15 million cubic yards of rock and shale overburden in its lifetime to date. It is still going strong at the Frances mine. Water is

carried to it by pipe. The coal storage bin is filled every morning and holds enough coal to run it for two shifts. Coal is loaded into mine cars without axles or wheels and trucked to the shovel where the car bodies are hoisted to the top of the coal bins and dumped.



**DESIGNED for the TOUGHEST JOBS!**



A Model LD Rear-Dump "Euc" receives a 30-ton load of rock overburden from a 6-yard shovel at a Pennsylvania open pit anthracite operation. Owner: Pioneer Construction Co. of Shamokin, Pa.

**"EUCS"**

22 tons of overburden from an open pit copper mine in Arizona are dumped over the waste bank by a Model TD Euclid. Isbell Construction Co. of Reno, Nevada owns a large fleet of these Rear-Dumps.



## Assure HIGH PRODUCTION at LOW COST

Rear-Dump Euclids are built for long, efficient service in open pit mines and quarries and off-the-highway construction and industrial work. For moving rock, coal, ore, overburden, and other heavy excavation, Rear-Dump "Eucs" have the capacity and speed to haul bigger loads faster and at lower cost per ton or yard moved.

There are models for every hauling requirement...and body designs for all types of materials. Rear-Dump Euclids of 10 to 34-ton capacity are ruggedly constructed to withstand the impacts of loading heavy excavation and hauling over rough roads. Outstanding features include the Euclid planetary type drive axle for long life and continuous performance...sturdy body with smooth interior and flared rear chute...welded frame of tremendous strength...fast, double-acting hydraulic hoist...and loaded travel speeds up to 35.4 m.p.h.

The parts and service facilities of Euclid's world-wide distributor organization assure prompt, efficient service wherever Euclids are used. Write for complete information on the Euclid line of earth moving equipment or see your distributor...today!



Arthur S. Knoizen, 52, of 913 Liberty Street, Franklin, Pa., executive vice president and director of the Joy Manufacturing Co., prominent in Franklin's industrial, civic and social life and widely known in mining circles throughout the United States and Europe, died in the Franklin Hospital at 8:45 a.m. April 29th.

Suffering a heart ailment for the past year, Mr. Knoizen's condition took a serious turn at his home last Sunday and he was removed to the hospital. His condition was reported to have improved earlier this week. His death this morning was sudden and the news left the community shocked and saddened.

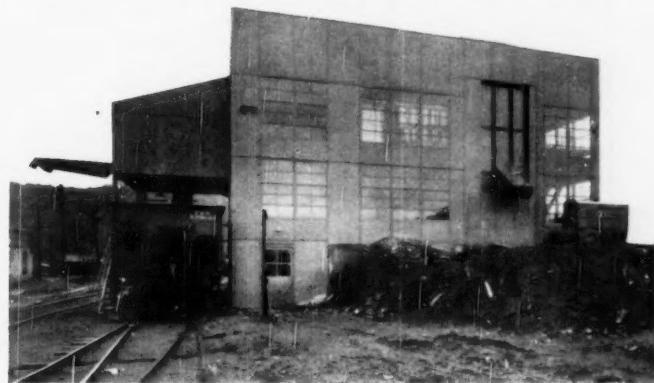
Mr. Knoizen was recognized everywhere as one of the foremost mining machinery engineers in the nation and much of the success of the Joy Manufacturing Co. was due to his ingenuity and guidance through the years as he came up through the ranks from machinist-welder to foreman, superintendent, salesman and executive capacities to the top.

He held important posts in various organizations in connection with industry and during World War II he served as a dollar-a-year man as director of the mining division of the War Production Board. Shortly after the close of the war Mr. Knoizen was a member of a government mission to Europe for the study of the coal mining situation there.

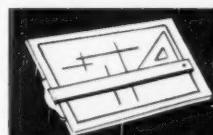
Mr. Knoizen was well informed on all phases of the mine machinery industry. He could build the product and sell it; he was the guiding hand in the shop and office alike and was the "sparkplug" around which the entire Joy enterprise evolved.

Because of his failing health he spent  
(Continued on next page)

## Look at Both Sides!

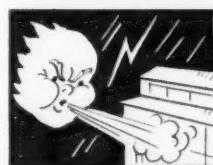


This is one job on which both your Superintendent and your Auditor will agree. Adaptability of use, flexibility of design and rapidity of erection will impress your production department, while the bookkeeping department will take notice of such outstanding features as initial low cost, durability of construction and economy of maintenance. No matter how you look at it, Steel-Bilt buildings are the perfect answer to your building problem!



### FLEXIBILITY OF DESIGN!

Only Steel-Bilt can offer you a building **custom-built** to your requirements, at a **standard-built** price! All you have to do is tell us your needs and we will take over from there. Our experienced engineers will design your building to your most exacting requirements—and it's part of our service!



### WEATHERTIGHT!

Our use of CEMESTO wall panels means we offer a **fully-insulated** building at a price competitive with many non-insulated buildings. Consider the many advantages of an insulated building for your use, then select CEMESTO—for the insulating equivalent of an 18-inch masonry wall! Buildings are also available with galvanized sheet and corrugated steel walls and roofs!



### DURABLE CONSTRUCTION!

Steel-Bilt buildings are permanent buildings at the price of a temporary structure! Year in and year out, these weather- and fire-resistant buildings offer maximum service at minimum maintenance costs through blistering summer and freezing winter weather! Rugged construction and quality materials team up to make these buildings stand up under punishment!

WRITE TODAY FOR DETAILS

## STEEL-BILT CONSTRUCTION COMPANY

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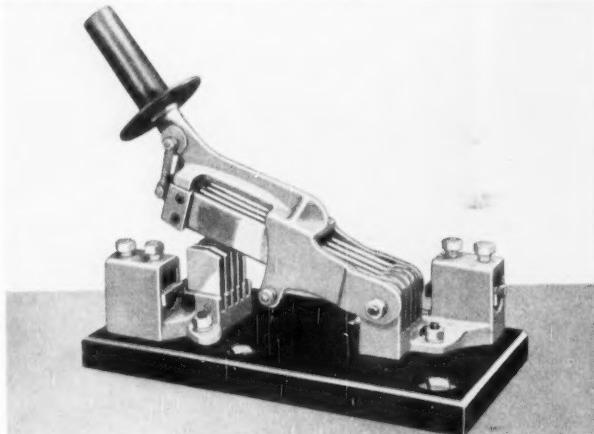
BRIDGEVILLE, PENNA.

## REDUCE POWER LOSSES... add to your operating profits with Mosebach track and trolley products!

Those invisible, yet costly power and profit leaks vanish when you standardize on Mosebach track and trolley equipment.

Engineered by practical mining men . . . tested by 30 years of successful service, each Mosebach product is designed for maximum safety, reliability and long life.

Remember—there's a superior Mosebach product for every haulage system need. See your nearest distributor or write direct.



**Mesco Heavy Duty Feeder Switches** are designed for 750 to 1500 ampere applications. Handles equipped with "quick-break," "quick-make" springs. Available in wood or steel boxes, suitable for mounting in any position. Universal terminals accommodate feeder cables from 250,000 to 1,000,000 CM in size.



**Mesco Hydraulic Brake Adjusters** are adaptable to most locomotives. Made in any desired length from 10' rod centers up. Can be instantly adjusted, anywhere at any time . . . wherever a grease gun is available. (Using any standard gun, motorman can handle adjustment.) Rugged . . . safe . . . eliminates sudden "let-downs" . . . easy to install.



**Mesco Shock Absorber** was developed for shuttle car use. But, with adjustments, can be used on other mine machinery. "Dead-ends" cables and allows slack for connecting cables to junction boxes or other power sources. Protects cables . . . limits splicing operations . . . saves time. Can be securely bolted to roof or chained to timbers or rail. Recommended for use on electrical, hydraulic or clutch-driven reels.

### MOSEBACH ELECTRIC & SUPPLY COMPANY

PITTSBURGH 3, PA.

Mescoweld Rail Bonds • Section Switches • Trolley Wheels • Mesco Track and Trolley Products • Mine Supplies and Specialties

most of the past winter in Florida, having returned here only a few days before his fatal illness.

Mr. Knoizen was born in Muskegon, Mich., on Nov. 17, 1897, the son of Bert and Amelia Bellfleure Knooihuizen. Early in his life his family moved to Weyburn, Saskatchewan, Canada. He returned to the United States at the age of 16. He obtained a high school education and later had courses in accounting and mechanical engineering.

Mr. Knoizen's employment by the Joy Co. began at Evansville, Ill., in July 1923, having relinquished a position as shop superintendent with the Aluminum Co. of America at New Kensington to become associated with J. F. Joy in the new enterprise. He came to Franklin in March 1924 as shop superintendent when Joy took over the Colburn plant and began the manufacturing of coal loading machines.

He was promoted to sales and service manager for Illinois, Indiana and western Kentucky in 1927 and became sales manager of the continually expanding Joy firm in 1934. He was elevated to the position of vice president in charge of sales in 1941 and a few years ago he was elected a director of the company and named executive vice president.

Mr. Knoizen belonged to a number of industrial organizations. He was president of the Manufacturing Division of the American Mining Congress and an honorary member of the Illinois Mining Institute.

He was a member of the Western Society of Engineers, the American Institute of Mining and Metallurgical Engineers and a number of other similar organizations. He belonged to the Wanango Country Club, the Franklin Club, the Rotary Club, the Franklin Lodge No. 110 B. P. O. Elks, and the Duquesne Club of Pittsburgh. He was a member of the Old Timers, a mining organization.

Mr. Knoizen was prominent in the Masonic fraternity. He was a member of Myrtle Lodge No. 316, F. & A. M., the Chapter, Franklin Commandery No. 44 Knights Templar, Oil City Lodge of Perfection, the New Castle Consistory and Zem Zem Shrine at Erie.

Mr. Knoizen was a director of the Exchange Bank and Trust Co.

Mr. Knoizen married Emily Hosner on June 29, 1918.

Surviving Mr. Knoizen are his wife, three children, Mrs. Robert Eakin, of Detroit; Ensign A. Kenneth Knoizen, U. S. Navy, now stationed at Pensacola, Fla., and Nancy Jane Knoizen, at home; his mother, Mrs. Amelia Knooihuizen,

(Continued on page 28)

(Continued from page 13)  
 coal. All wheels are controlled by hydraulic cylinders. As coal is loaded out, the loading head is extended and can be made to reach all area along the face of a 35 foot room. Capacity of the Loader in loose coal, is  $1\frac{1}{2}$  tons per minute. Overall height is  $25\frac{1}{2}$ ". Lubrication is by Gulf Oil Products. With the installation of this equipment, all hand loading was discontinued and the mine is now 100% mechanical.

The coal is loaded into wooden mine cars having a capacity of  $1\frac{1}{2}$  tons. The empty cars weigh 1400 pounds. These cars are handled by two, 4-ton, 31-inch gauge, Greensburg "Ranger" type,

storage battery locomotives. One locomotive is used for gathering and one for main line haulage. The mine operates three shifts per day with a capacity of 700 to 800 tons for the 24 hours. Both locomotives are equipped with transfer racks and one extra battery for the three shift operation. Batteries are 42 cell 23 plate Gould type XVL-P having a capacity of 421 ampere hours and 34.9 kilowatt hours. The Greensburg "Ranger" locomotives are 42 inches high, 45 inches wide and have a wheel base of  $32\frac{1}{8}$  inches. The cars are gathered from the elevating conveyors by one locomotive and placed on a side track. From this side track

the second Greensburg "Ranger" locomotive hauls them in from 25 to 35 car trains 5,400 feet to the tipple. The Powell Coal Company has recently opened another mine in which they have a third 4 ton Greensburg "Ranger" type, storage battery locomotive.

At the present, all coal is cleaned on the picking table but the Company is installing a cleaning plant that will be in operation by the 15th of June. The plant is a Mobil-Mill, a product of Western Machinery Company and when completed will clean the coal from both operations. The Company expects to put 1500 ton per day over the plant upon completion of the plant and the development of the new operation.



One of the Greensburg Ranger Battery Locomotives gathering cars underground.



A Greensburg Ranger Locomotive pulling trip of cars out of the mine.

## WESTERN PENNA. COAL OPERATORS GOLF ASSOCIATION MEETS MAY 18



Group of happy young men who attended the golf parties in 1949.

The Bituminous Coal Operators Golf Association of Western Pennsylvania will hold its first meeting of the 1950 season at the Uniontown Country Club near Brownsville the later part of May. Members and their friends will receive notices giving the exact day of the opening.

The publication COAL MINING has made 1400 feet of color motion pictures in Florida this winter and will show them at the parties. Color motion pictures of modern underground mining and of strip mining will also be shown at these parties; together with color motion pictures of golfers in action last year. More color motion pictures will be made at these parties this summer and will be shown as fast as they are finished.

(Continued from page 26)

Buffalo, N. Y.; his father, Bert, in Weybrun, Canada, and the following brothers and sisters: Fred F. Knoohuizen, Franklin; Mrs. Loretta Squelch, Mrs. Jennie Reid, and David Knoohuizen, Buffalo, and Albertus Knoohuizen, Vancouver, British Columbia.

*A message to the employees of the Joy Manufacturing Company by its president, J. D. A. Morrow.*

#### TO OUR EMPLOYEES:

THE death of Arthur S. Knoizen, our beloved Executive Vice President,

is a great loss to all of us and to our company. We shall miss the guidance of his sure hand and the inspiration of his dynamic leadership. No one individual can replace him.

But he will continue to live in the engineering, manufacturing, sales, and other departments of our organization that have been so firmly molded and so deeply impressed with his great personality.

His death marks the end of an era of pioneering in mechanized coal mining. He pioneered the coal loading machine, the shuttle cars, the continuous miner, and the new technique of trackless mine operation that these machines make possible. That pioneering is done. These

machines and this mining method are accepted.

But he saw the beginning of the new era and the new challenge. Ahead of us are the years in which mechanized mining and the other industrial processes for which we design and build machines must be perfected through continued engineering research and development, better manufacturing, and keener salesmanship. We must reaffirm our adherence to the solid principles on which Arthur Knoizen built his life work.

First, to give our customers the best machines at the lowest cost. Only in this way can we maintain our leadership, our business, and our employment.

Second, always to keep clearly in mind the fact that the success and growth of the company and our own success and welfare are one and the same. Hard, loyal work by all our employees has built this company from its small beginnings to its present worldwide organization and has provided jobs for thousands of employees. Every employee must carry on that fine and loyal work to continue the company's upward progress and to create future benefits to our customers, our stockholders, and our employees.

J. D. A. MORROW  
President

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## MOORE-FLESHER HAULING CO.

**MOVERS of Coal Stripping and Contractor's Equipment**

TWO LOCATIONS

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AND

Stoney Hollow Boulevard, Steubenville, Ohio, P. O. Box 547



Joy Manufacturing Company today announced that E. M. Platts, sales vice president, has been elected executive vice president to succeed the late Arthur S. Knoizen.

With an extensive background of familiarity with the mining field, Mr. Platts joined Joy Manufacturing in 1945. This came about through Joy's acquisition of La-Del Conveyor & (Continued on next page)

(Continued from page 28)

Manufacturing Company, producers of underground conveyor systems and axial flow fans for mines. He had served La-Del as vice president, and his first position with Joy was vice president in charge of coal equipment sales. Two years later he was elected to Joy's board of directors and placed in charge of all sales.

Mr. Platts began his business career with Jones & Laughlin Steel Corporation in 1913. He left this firm in 1917 to become associated with the Bendum Trees Company. He served this company in various official capacities and from 1920 to 1929 was general manager of Pittsburgh and Wheeling Coal Company.

In 1929, Mr. Platts established his own manufacturer's agency for mining machinery, which business he conducted until 1932. In that year, he became one of the founders of the La-Del Conveyor & Manufacturing Company, New Philadelphia, Ohio, whose later acquisition by Joy brought him into the organization of the nation's largest manufacturer of mechanical mining equipment.

Mr. Platts, born in Leonardsville, New York, is 54 years old and has lived in the Pittsburgh area since childhood.

## Here And There

The annual meeting of the Mineral Producers Association will be held at the Wm. Penn Hotel, Pittsburgh, Pa., June 2.

Speakers at the afternoon session will be:

"Proposed National Legislation Affecting the Coal Industry"—Walter F. Schulten, Pittsburgh Consolidation Coal Company.

"Recent Researches on Acid Mine Drainage"—S. A. Braley, Senior Fellow, Mellon Institute, Pittsburgh, Pennsylvania.

"Extent and Character of Lands Disturbed by Open-Pit Mining—Treatment"—Merritt J. Harding, Regional Forester, Pennsylvania Department of Forests and Waters, Clarion, Pennsylvania.

At the dinner meeting, R. L. Ireland, President of the Ohio Coal Association, will speak on "Coal Is My Business".

## PATENTS

Overload protection for electric circuits is provided by an ingenious thermally-operated electric relay on which the U. S. Patent Office awarded patent 2,486,239 this week. Its particular advantages are that it combines small size with virtually no contact friction and good accuracy and constancy of calibration.

The patent has been assigned to Westinghouse Electric Corporation by its recipient, George C. Armstrong of Pittsburgh. It is one of 831 patents of the week. It is a relay with a heatable container structure which contains

mercury and a volatile liquid. Overload causes heat to volatilize this liquid, causing mercury displacement and a change in its level. The level of the mercury is used to make and break electrical connection between contacts associated with the device.

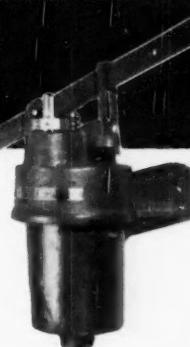
A pipe thread cleaning tool, which can be used to clean either outside or inside thread on piping and can be readily adapted to accommodate threads of different diameters, earned William Wallace Williams, Mexia, Tex., patent 2,489,443. It is particularly designed for the cleaning of pipes in oil wells.

## FOR USE ON PERMISSIBLE ASSEMBLIES\*

## CONVEYOR CONTROL SWITCH

*Explosion Tested and Open Types*

The Schroeder Brothers Conveyor Control Switch is a simple pulcord, pilot circuit device that is quickly operated from either or both directions by a tug on the cord. It is available in Design MS (open type) and MSP (explosion tested) and has one "on" and two "off" positions . . . the second "off" position is an additional safety factor as two tugs on the pull cord are required to energize the circuit.



The U. S. Bureau of Mines in a letter dated 12-19-49, file X-P-3471 found the Schroeder Conveyor Control Switch to be "suitable for use on permissible assemblies."

## • FOR BELT CONVEYORS

With a Design MS Switch, a belt conveyor is under complete control and can be stopped or started from any point along its full length. This is a decided safety advantage in emergencies and in transporting men to and from work. A rock fall over the belt will generally pull the cord bringing the conveyor to a stop, thereby holding the damage to a minimum.

## • FOR SHAKING & CHAIN CONVEYORS

The Design MS Switch, when installed on or near the magnetic starter of a shaking or chain conveyor, provides a "start-stop" control from the loading end without running an electrical circuit to that point.

*Please write for complete information on the Schroeder Brothers Conveyor Control Switch and other Air and Electrical Mining Equipment.*

**SCHROEDER BROTHERS**  
3116 Penn Ave.      EXPress 1-1571      Pittsburgh 1, Pa.

**SMOOTH, STEADY-**

**Full Jeweled  
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**'Super 10"**

Consistent power  
when you want it!  
Smooth performance  
season after season  
because it is precision  
engineered for  
the finest outboating  
you've ever enjoyed.

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**Flexible Ventilation Tubing**

The tough, mildewproof, easy-to-install, light-weight mine ventilation tubing with simple patented couplings. Available in several grades, 8" to 36" diameter. Also Non-Collapsible Mine Vent Tubing for quickly exhausting foul air. Made by makers of ABC Brattice Cloth and Mine Vent Powders.

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Everywhere

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**AMERICAN**  
**BRATTICE CLOTH CORP.**  
**WARSAW, INDIANA**

## NEW EQUIPMENT

- MOBILE DRILLING COMPANY, INC.



Mobile Drilling Company, Inc., of Indianapolis, Indiana, have just brought out a new drilling unit Model B-35. Stronger and more powerful than their B-27 model, the new drill has many additional advantages. Weighing less than 1,000 pounds and usually jeep-mounted, taking its power from the power takeoff, it will auger holes from three inches in diameter to twelve inches. One side is open the entire length of the carriage, permitting easy installation and removal of the augers. The transfer case guides are new improved extended roller chain.

With hydraulic controls mounted at the finger tip of the operator, this becomes truly a one-man operation. The drill can be converted from a vertical to a horizontal position in a matter of minutes by a unique turn-table. This allows the rig to be used for augering

holes prior to the blasting of overburden. The B-35 has lost nothing in adaptability and flexibility even though it is larger in size than the B-27 model.

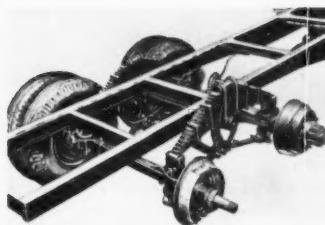
As a prospecting drill, it can auger holes, without the use of water, to a depth of 100 feet through hard pans, shales and soft stone formations. It is the ideal mobile, inexpensive equipment on the road and off the road for wildcat prospecting for coal and other minerals. Its light weight permits easy transportation, when Jeep mounted, because it goes any place a jeep can go. This drilling rig will operate even in the most mountainous terrain. Both the B-35 and the B-27 mobile drills are approved by the Willy-Overland Company and available through all Jeep dealers.

- LITTLE GIANT PRODUCTS, INC.

Little Giant Products, Inc., Peoria, Ill., announces new design improvements in its "Trailing Axle" line which bring greater strength, less maintenance cost and increased load capacity to two models designed for 1 $\frac{1}{2}$  to 5-ton trucks. The Little Giant "Trailing

Axle" is designed for use with two-axle trucks, to almost double load capacity by the installation of third axles and wheels directly behind the rear, driving axle.

Oversized axles and heavier castings are augmented by the new, completely



rubber-bushed ends of the torque arms which eliminate all shock from starting and stopping. All Little Giant parts—including much heavier manganese springs for greatly increased load capacity, and certified malleable or steel shackle castings—are now 20 per cent heavier than recommended to provide an unusually high safety factor. The complete rubber bushings at torque arm ends replace former bronze bushings and eliminate four grease points for simplified maintenance.

Little Giant announces these improvements as currently effective in Models B and C with load capacities of 12,000 and 15,000 lbs. With installation of these third or "trailing" axles, axle spacing may be either 44 or 49 inches.

"Trailing Axles" and other automotive equipment lines manufactured by Little Giant are nationally distributed through truck equipment distributors to automotive dealers.

#### • HOMESTEAD VALVE MANUFACTURING COMPANY

An All-Electric Steam Cleaner designed especially for use underground, or wherever gaseous or explosive mixtures have previously made cleaning impractical, is announced by the Hy-pressure Jenny Division of Homestead Valve Manufacturing Co., Coraopolis, Pa.



Known as the Homestead-Yeager All-Electric Steam Cleaner, the unit is electrically heated and electrically powered. It is said to remove grease, dirt, and other deposits from machinery, equipment, floors, etc., ten times faster than by hand-methods.

The All-Electric Steam Cleaner properly mixes a constant amount of water with the desired amount of dissolved cleaning compound, and pumps the mixture through a manifold where it is electrically heated in progressive

stages. At 100 to 120 pounds normal operating pressure, the boiling hot solution and vapor are ejected from the cleaning gun in a powerful 60 gallons per hour blast that cuts, dissolves, and flushes away the heaviest dirt and grease deposits.

Portable either by means of its own wheels or its balanced crane hook eye, the Homestead-Yeager Steam Cleaner is made in the STANDARD, SPA series, approved by the Pennsylvania Department of Mines for use in fresh air underground; and in PERMISSIBLE, BMA Series which will carry U. S. Bureau of Mines approval. The units are available for practically any

power circuit; and have a demand of 50 kw.

Approximate weight: 800 lb.

Dimensions: 66" x 36" x 32" high

The manufacturer will send free literature upon request.

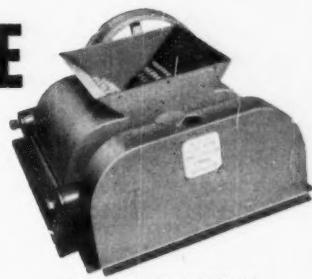
#### • SPECO, INC.

Speco, Inc., Cleveland, announces issuance of a new application bulletin on RUSTREM, anti-rust paint.

According to the manufacturer, RUSTREM can be applied right over rust without wire brushing or scraping. It penetrates and seals the surface, effectively preventing further rust action.

## Save OPERATION COSTS!

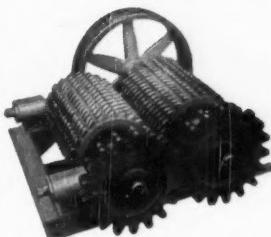
# SCOTTDALE *double-roll* COAL CRUSHERS



MODEL NO. 63 STANDARD

Coal crushed at lower operation costs? Certainly! The Scottdale double-roll Coal Crushers—through an efficient shredding action caused by toothed double rolls assembled in a staggered position—result in less power consumption per ton of coal . . . and more uniform, consistent coal products. Profit today by increased coal processing efficiency . . . install SCOTTDALE double-roll COAL CRUSHERS!

#### CHECK THESE EFFICIENT SCOTTDALE FEATURES!

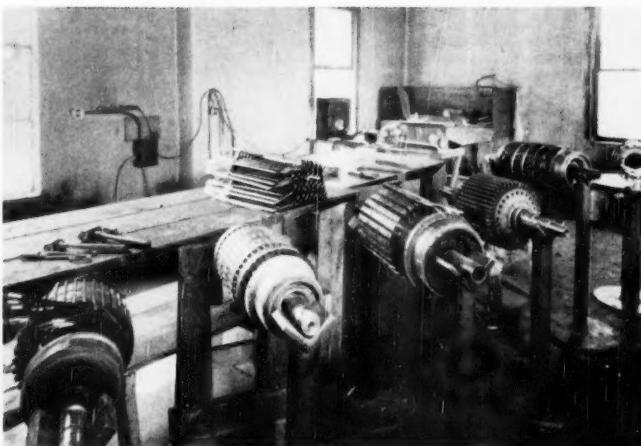


- ✓ FORGED STEEL TOOTH GEARS
- ✓ WELDED STEEL BASE
- ✓ GROOVED FLYWHEEL
- ✓ BRONZE BUSHED JOURNAL BEARINGS
- ✓ WELDED STEEL HOPPER AND GEAR GUARD

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LITERATURE

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*... for deep and strip mines*



• The best wire rope is the cheapest to use. It operates more smoothly and means fewer shutdowns.

We are distributors of AMERICAN CABLE TRU-LAY Preformed. We stock popular constructions. We assure you quick service. Try this high quality, long-lasting wire rope on your equipment. It will reduce your costs.

**McCLURE EQUIPMENT CO.**

3045 Jenkins Arcade

Pittsburgh 22, Pa.

RUSTREM, long available in black and Super Aluminum, is now listed in clear, colorless form for use as a primer or base coating. RUSTREM CLEAR can be painted over with any quality paint (except lacquer).

• NATIONAL ELECTRIC PRODUCTS CORP.

Catalog No. 509, covering "Neasbestos" wires and cables which have asbestos or asbestos and varnished cambric insulation and are therefore most suitable for electrical installations where extreme heat, corrosive fumes and fire hazards are present, has been revised and is again available from National Electric Products Corp., Chambers of Commerce Bldg., Pittsburgh.

This wire for hot spots, as the manufacturer identifies severe operating conditions, includes 600 volt cable for motor connections and electric furnace leads; 600 volt control cable for boiler rooms and power stations; 600 volt cable for hinge or jumper connections on swinging panels, and high voltage power cables.

National Electric also describes and illustrates in the 34-page Catalog No. 509 its "Neasbestos" line of 300 volt cable for motion picture projectors, arc lamps and spot lights; 300 volt stove wire; 300 volt heat-resisting flexible cord; 300 volt heat-resisting fixture wire for wiring lighting fixtures and radio apparatus, plus 600 volt switchboard wire for use on panel boards, switchboards and control equipment.

• WM. D. GREGG COMPANY

It is with a great deal of interest that we note that the Wm. D. Gregg Co., distributors of Mercury Outboard motors, Mastercraft Trailers, Century, etc. are moving from their present location at 114 Ninth St. to 2046-48 West Liberty Ave. Mr. Gregg tells us the increased volume of business, the result of the outstanding place the Mercury Motor has developed through the best year of successful outboard racing, has necessitated this move to larger and more spacious quarters. In their new location it will be possible for you to see all the different models and form a much better idea of exactly the motor you want, and exactly the boat you want, to be pushed by that most outstanding of motors, the Mercury line. Mr. Gregg is very proud of his new place and invites all of his former and future customers to drop in on him any time at 2046-48 W. Liberty Ave. and see Pgh.'s most completely equipped establishment for the dispensing of Marine equipment.

(Continued from page 14)

insure thorough hole-cleaning. The second steel is inserted and the hole completed. The RBD-1 drill mechanism is self-leveling as the boom is raised. Pressure of the drill steel on the side of the hole causes the drill to slide on its mounting so that an absolutely straight hole is drilled. The self-leveling, self-aligning feature of the RBD-1 is automatic and requires no attention from the operator. Joy Sulmet tungsten-carbide bits, specially designed for the RBD-1, are used on this property.

Three factors contribute to the increased drilling speed possible with the RBD-1. First, no man-handling is required. With both stopers and hand-held electric drills the operator must exert considerable manual effort to hold the drill in place. The RBD-1 is self-supported and self-feeding. This factor, plus an inherently greater drilling capacity, is apparently the reason for the difference in drilling speed, which averages 3.77' per minute for the RBD-1 and 1.00' per minute for the hand-held drills in this mine.

The second factor favoring the RBD-1 is the fact that it is self-propelled. Tramming time between places requires 3 to 4 minutes with the RBD-1 as opposed to 6 to 8 minutes for either stopers or hand-held electric drills.

A third factor which cuts drilling time with the RBD-1 is the low overall height of the drilling mechanism. Since the steel change is determined by the distance between the top of the chuck and the roof, the shorter the drill, the longer the steel change. The drilling mechanism of the RBD-1 is only 12½" high as compared to 21" for the shortest stoper in the field. Because of this difference the RBD-1 will bottom the deepest possible hole with only one change of steel. Stoppers and hand-held electric drills require two or three changes to drill the same hole. Since steel-change time is wasted time, the RBD-1 spends considerably less non-productive time than any other type drill. It seems evident that where rotary drilling is applicable, self-propelled, hydraulic drills like the Joy RBD-1 will give a lower roof-bolting cost than any other method.

A coal preparation conference will be held in Paris, France in June. A copy of some of the objectives of this conference can be obtained by writing to Mr. Thomas Fraser, Supervising Engineer, Coal Preparation Section, U. S. Bureau of Mines, Washington, D. C.

**YOUR INVESTMENT . . .**

Modern mining demands that your investment in time, effort and equipment be tremendous.

Coal Operators Casualty Company, through its Specialized Services may aid you to get increased efficiency from your investment . . . reduced accident frequencies . . . fewer litigations . . . lower insurance rates . . . and improved production methods through engineering analyses. Write today for complete details.

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THE SYMBOL OF SERVICE  
FOR COMMERCE AND INDUSTRY

## CONTROL Your Water Problems with the *Flood City* PLUNGER PUMP



Power end is made of hi-grade semi-steel with a large cover to facilitate inspection. All moving parts are completely self-lubricating. Intermediate shaft runs on adjustable roller bearings. Furnished V-Belt or Gear Drive. Size 5 x 5; Capacity, 50 gals. per minute, 2" suction and 3" discharge.

This pump uses the leak-proof, acid-resistant FLOOD CITY REVERSIBLE WATER END—standard for replacement purposes in large and small coal mines. Write for more information on this and other Flood City Mining Equipment.

**Flood City Brass & Electric Co.**  
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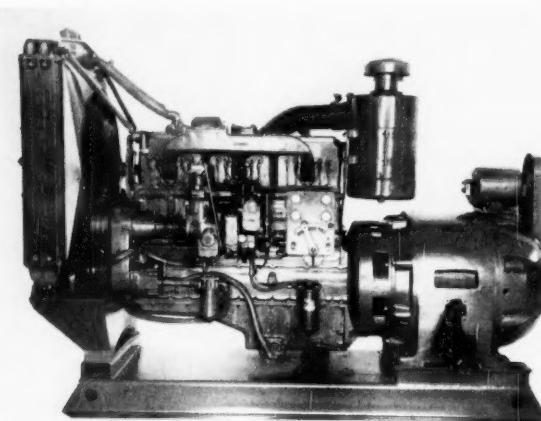
Phone MUseum 1-1555-6-7

Mr. D. W. Buchanon, Jr. was elected president of the Old Ben Coal Corporation of Illinois. He is a grandson of the late Mr. D. Buchanon, pioneer Illinois Coal Operator and is a graduate of Princeton University.

P. R. Paulick, Consulting Engineer,

doing Domestic and Foreign Work for many years, has expanded his organization and it is now known as P. R. Paulick and Associates. They will specialize in Planning and Design, Complete Mining Installations and Cost Analysis.

- CUMMINS ENGINE COMPANY, INC.

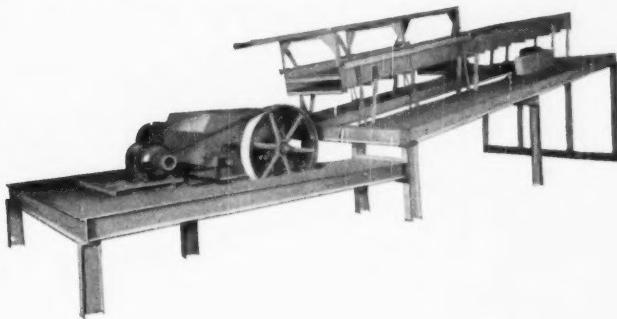


The Model NHSGA Cummins Diesel-powered electric generator unit shown is one of a standard commercial line announced by Cummins Engine Company, Inc., Columbus, Indiana.



Link-Belt dragline, equipped with new Caterpillar 1700 Diesel engine handling mine timbers at an Illinois deep mine.

• BONDED SCALE & MACHINE COMPANY



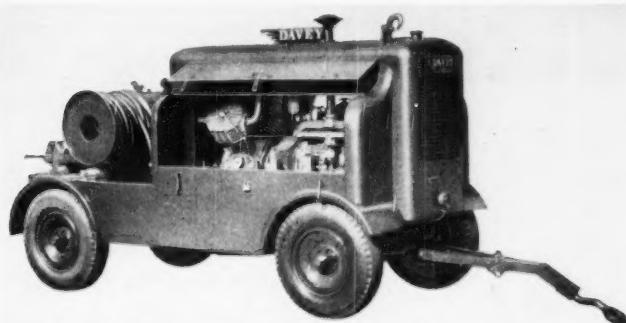
The new MIN-PRO prefabricated coal preparation plants, with capacities of from 80 to 200 tons per hour, are built of welded structural steel. Because they are so easily moved, MIN-PRO plants are used by coal strippers and other owners of several coal properties, who are now able to take all their equipment with them to new locations. These portable tipples will pick, clean, crush, and size mine-run coal in continuous operations. All production can be channeled to a stoker coal crusher, or separation of lump and fines can be made.

These tipples are built by the Bonded Scale & Machine Company for the Mineral Processing Equipment Corporation, 2176 South Third Street, Columbus 7, Ohio. They are definitely in the low-price field and within the range of every producer. MIN-PRO plants in-

clude: shaker screen, shaking picking table; refuse pans and conveyor; double-roll crushers; all feed and discharge conveyors; storage hopper and feeder; structural steel frame; floor plates; walls, roof, and windows; motors, drives, and inside wiring. Shaker screen may also be purchased separately. The entire structure is steel, including the eccentric mechanism, which has no castings to break and slow production.

MIN-PRO tipples are easily dismantled and erected in a few days, and there is no need for expensive moving or hoisting machinery. All major sections are bolted together, and all bolts and fishplates are easily accessible. Literature and prices are available from the Mineral Processing Equipment Corporation, or any Bonded distributor.

• DAVEY COMPRESSOR COMPANY



The new four wheel Davey Compressor was built to furnish 210 or 315 cubic feet of air per minute. It has 2 hose reels, each holding 50 feet of rubber hose. Tires are 700 x 20. Can be gas or Diesel driven.

**Attention!**  
Cost minded operators.  
**Another Price Reduction**  
on **STAR** **ALUMINUM -**  
**ALLOY MINE**  
**ROOF JACKS.**

**ADDED FEATURE**  
**\* Automatic**  
**Screw Thread**  
**Cleaner, plus**

35% to 50%  
Lighter Weight  
Faster Operating  
Strong & Dependable  
Rust-Proof

Increase Production  
Reduce Maintenance  
Improve Safety

8 Ton Timber Jacks  
16 Ton Safety Posts

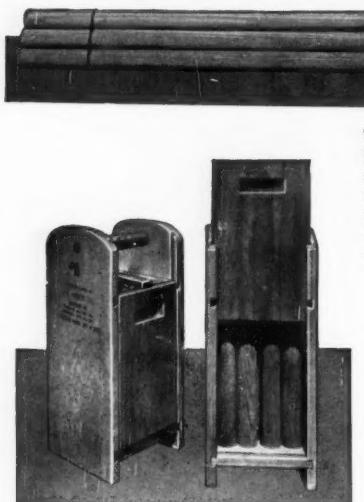
\* Pat. Applied For

*Also*  
**Announcing Our**  
**Low Cost, Heavy Duty**  
**Hydraulic Jacks**



WRITE OR PHONE OUR REPRESENTATIVES  
S. E. GANE & CO., PITTS 19, PA.  
R. E. GERDETZ EQUIP'T CO., BLUEFIELD, W. VA.  
SOUTHERN ENGINEERING CO., CHATTANOOGA 4, TENN.  
CONTROLLER BLOCK & SUPPLY CO., KERMIT, W. VA.  
WETZEL EQUIPMENT AGENCY, SALT LAKE CITY, UTAH  
PEACOCK BROTHERS, LTD., MONTREAL, CANADA

**STAR JACK CO., INC.**  
Elmwood Park, Chicago 35, Illinois



**WOOD TAMPING POLES FOR TAMPING EXPLOSIVE SHOTS:** Poles are round made of hardwoods, lengths to 10 ft. Price per lineal ft. 1" dia. 6c, 1 1/8" dia. 9c, 1 1/4" dia. 10c, 1 3/8" dia. 12c, 1 1/2" dia. 14c, 1 3/4" dia. 20c. Special diameters and lengths can be furnished.

**EXPLOSIVE BOXES:** Made entirely of wood having no metal parts, tongue grooved and dovetailed construction with automatic lock using a rubber band for a spring, treated with paraffin to make moisture resistant. "Approved by the Pennsylvania Department of Mines." Sizes as listed based on 1 1/4" x 8" sticks.

|                        |        |      |                               |        |      |
|------------------------|--------|------|-------------------------------|--------|------|
| No. 9 Powder Box.....  | \$2.05 | Each | No. 50 Powder Box.....        | \$6.40 | Each |
| No. 12 Powder Box..... | \$2.40 | "    | No. 72 Powder Box.....        | \$7.50 | "    |
| No. 16 Powder Box..... | \$2.85 | "    | No. 90 Powder Box.....        | \$8.40 | "    |
| No. 20 Powder Box..... | \$3.10 | "    | No. 6 Cap Box.....            | \$1.70 | "    |
| No. 25 Powder Box..... | \$4.20 | "    | Sizes 2 1/2" x 3" Inside      |        |      |
| No. 36 Powder Box..... | \$5.30 | "    | No. 8 Cap Box.....            | \$1.70 | "    |
|                        |        |      | Sizes 2" x 2 1/2" x 8" Inside |        |      |

The above boxes are rigid and non-conductive

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No priming, scraping, brushing

Rustrem paints right over  
rust. For stacks, fire-  
escapes, bridges, fences,  
flashtings... all metal. Farm,  
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Black and aluminum.



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Please Say You  
Saw It In  
Coal Mining

### • THE DUFF-NORTON MFG. CO.



James F. McCartney

James F. McCartney has been appointed general sales manager of The Duff-Norton Manufacturing Company here. Effective immediately, Mr. McCartney will be in charge of all industrial, mining and railroad sales of Duff-Norton jacks.

Since October, 1948, Mr. McCartney has been eastern district sales manager for the company, with headquarters in New York City. Before joining Duff-Norton, he was eastern representative for Pressed Steel Car Co. for seven years. Mr. McCartney will now be located in Duff-Norton's main offices here in Pittsburgh.

### DAVEY COMPRESSORS



ONLY COMPRESSOR  
WITH PERMANENT  
PEAK  
EFFICIENCY  
LIFETIME  
VALVES

DAVEY COMPRESSOR CO.  
KENT, OHIO

## HAMMOND'S BLASTING EQUIPMENT

|                        |        |      |                               |        |      |
|------------------------|--------|------|-------------------------------|--------|------|
| No. 9 Powder Box.....  | \$2.05 | Each | No. 50 Powder Box.....        | \$6.40 | Each |
| No. 12 Powder Box..... | \$2.40 | "    | No. 72 Powder Box.....        | \$7.50 | "    |
| No. 16 Powder Box..... | \$2.85 | "    | No. 90 Powder Box.....        | \$8.40 | "    |
| No. 20 Powder Box..... | \$3.10 | "    | No. 6 Cap Box.....            | \$1.70 | "    |
| No. 25 Powder Box..... | \$4.20 | "    | Sizes 2 1/2" x 3" Inside      |        |      |
| No. 36 Powder Box..... | \$5.30 | "    | No. 8 Cap Box.....            | \$1.70 | "    |
|                        |        |      | Sizes 2" x 2 1/2" x 8" Inside |        |      |

## Dragline Buckets

### MANGANESES

Chain

Teeth

Rounds & Flats

### STERLING Water Pumps



## George L. Wilson & Co.

### Office & Warehouse

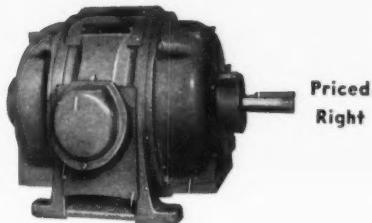
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Phone CEdar 1-7710

**The Largest Stock of  
Electric Motors in Penna.**

New  
&  
Rebuilt



**MEYER BROS. COMPANY**  
Philipsburg, Pa.

TAKE  
THE  
GUESSWORK  
OUT OF  
**STRIP  
MINING**



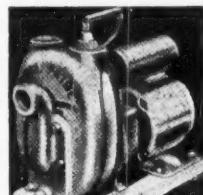
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**HOSSELD**  
ROCK DRILL  
WITH  
**PROSPECTING  
ATTACHMENT**

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of any change of address.

**SELF-PRIMING  
CENTRIFUGAL  
PUMPS  
FOR  
GATHERING  
SERVICE**



Cap. 3000 to 200,000 G.P.H.  
Engine or Motor Drive

ESTABLISHED 1836

**TRANTER MFG. CO.**  
105 WATER ST. COURT 0600



**CUT COSTS AS MUCH AS 50%**

Thorough field tests have proved that test holes can be drilled for as little as 20c per foot—and accurate samplings map underground deposits to the inch. Powered by rugged 5 H.P. 4 cycle gas engine. Easily portable into ordinarily inaccessible spots.

One man can operate easily, prospect fields more thoroughly and in less time than by other drilling methods. Churn type drill drills through frozen ground, shale, limestone, etc. to depth of 70 feet and diameters up to 25<sup>8</sup>".

Water pumped into hole carries cuttings up through hollow drill for recovery and sampling as often as desired.

Without prospecting attachment the Hossfeld Rock Drill has, for years, proved itself ideal for blast hole drilling because it drills same diameter hole the full depth.

Write for new illustrated Bulletin describing the Hossfeld Rock Drill with Prospecting Attachment.

To Dealers: Write for details of dealer franchise.



**HOSSELD**  
*Manufacturing Co.*  
WINONA, MINNESOTA

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## COAL LOADING DIPPER

FEATURED AT A  
LARGE OHIO STRIP MINE



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Dippers for Any Model and All Makes of Shovels • Manganese Drag Chains  
Dump Blocks and Shackles • Hazard Wire Rope

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DALY'S IMPROVED COMBINATION MINE CHECK  
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Solve  
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DRILLING  
PROBLEMS!**

"WE LOOK INTO THE EARTH"



### DIAMOND CORE DRILLING

BITUMINOUS COAL LANDS  
TESTED . . . SATISFACTORY  
CORES GUARANTEED

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Punxsutawney, Pa.

Call 382

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- Coal Property Testing
- Pre-Grouting Mine Shafts
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PENNSYLVANIA DRILLING CO.  
PITTSBURGH 20, PA.

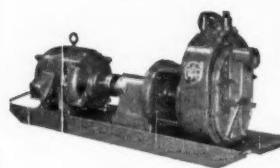


### "SUPERIOR" COUPLING LINKS

Drop Forged, Electric Welded, Fire Welded  
A "Superior" line of Mine Car Couplings of all sizes  
various types — All sizes,  $\frac{3}{8}$  in. & larger  
Shackles — Cutter Bits — Bit Steel

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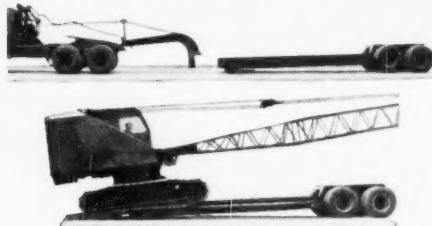
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SELF-PRIMING  
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PUMPS

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**WE USE TALBERT  
REMOVABLE GOOSENECK TRAILERS**



TALBERT trailer features are:

- ✓ Easier to Load
- ✓ Easier to Unload
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- ✓ Lower Loading
- ✓ No Skids to Handle

which all means a saving of time and money on your equipment moves.

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- Cages—all kinds for all purposes
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- Pumping machinery
- Lorries for coal and slate
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We manufacture a full line of safety and labor saving equipment

**Connellsville Manufacturing and  
Mine Supply Company**

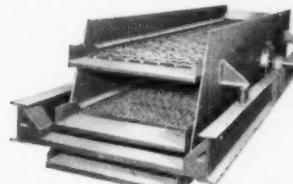
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**VIBRATING SCREENS • CONVEYORS • FEEDERS  
SCALES • CRUSHERS • CONVEYOR IDLERS**

Guaranteed Equipment — Immediate Shipment

**VIBRATING SCREENS**



100 machines in stock: screen sizes 2' x 5' to 5' x 14'; 1 to 5 decks. Positive throw eccentric shaft types; also eccentric weight types. Prices from

\$395.00

**CONVEYORS—PICKING TABLES**



Troughing idler conveyors—picking tables. Any length, belt widths to 60". Prices from

\$395.00

**TRoughing IDLERS AND ROLLERS**

All steel. Interchangeable with other well-known makes. Replaceable precision ball bearings with alemite fittings. No bearing adjustments required. Easy to start and will run in cold weather. Rust-proof ball races; maintenance is negligible. Build your own conveyors; we have standard sections, head and tail pulleys, takeups, drives, idlers, speed reducers, sheaves, belting, etc.

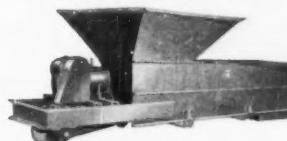
3-roll Troughing Idlers for these sizes:

|          |          |          |         |
|----------|----------|----------|---------|
| 14" belt | \$18.50  | 24" belt | \$21.00 |
| 16" belt | 19.00    | 30" belt | 22.00   |
| 18" belt | 20.00    | 36" belt | 23.00   |
|          | 42" belt |          | \$24.00 |

|                                       |          |          |         |
|---------------------------------------|----------|----------|---------|
| 1-roll Return Idlers for these sizes: |          |          |         |
| 24" belt                              | \$8.25   | 36" belt | \$ 9.75 |
| 30" belt                              | 9.00     | 42" belt | 10.50   |
|                                       | 48" belt |          | \$11.25 |

**HEAVY DUTY PLATE AND PAN FEEDERS**

Complete With Motor and Drive



|                                  |           |
|----------------------------------|-----------|
| 15 to 35 ton per hour capacity   | \$ 350.00 |
| 28 to 60 ton per hour capacity   | 455.00    |
| 50 to 100 ton per hour capacity  | 510.00    |
| 100 to 175 ton per hour capacity | 1188.00   |
|                                  | 1449.00   |

**TRUCK SCALES**

|                     |          |
|---------------------|----------|
| 15 Ton Truck Scales | \$450.00 |
| 20 Ton Truck Scales | 510.00   |
| 26 Ton Truck Scales | 565.00   |

Others to 50 ton capacity. All scales complete with structural steel weighbridge.

More than 2000 mines and quarries have Bonded equipment.

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2188 S. Third Street

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## REBUILT EQUIPMENT

### SPECIAL BARGAIN COAL DRILLS

2—Jeffrey—250 v. DC.

### COMPRESSORS—SPECIAL BARGAIN

7—240 cfm Westinghouse 3 cyl. vert. 150 hp. pres. dir. con. to 50 HP. AC Slip ring or DC Motors.

### MOTOR GENERATOR SETS—250 V. D.C.

Motors 220, 440 v. or 2200 v.—3 ph., 60 cy.

| No. | KW  | Make             | Speed |
|-----|-----|------------------|-------|
| 3   | 250 | Westinghouse     | 1200  |
| 1   | 200 | Westinghouse     | 720   |
| 2   | 200 | Westinghouse     | 1200  |
| 1   | 100 | Westinghouse     | 700   |
| 1   | 100 | General Electric | 900   |
| 1   | 100 | Westinghouse     | 600   |
| 1   | 100 | General Electric | 1800  |
| 1   | 100 | Reliance         | 580   |
| 1   | 100 | Delco            | 1200  |
| 2   | 90  | Westinghouse     | 680   |
| 4   | 75  | Westinghouse     | 720   |
| 1   | 75  | Westinghouse     | 1200  |
| 1   | 60  | Westinghouse     | 1200  |
| 1   | 40  | General Electric | 1800  |
| 3   | 40  | Westinghouse     | 900   |
| 2   | 30  | Westinghouse     | 720   |

### 125 V. DC M.G. Sets

1—100 kw. G.E. 125 v. 900 rpm. 220/440 v.  
3 ph. 60 cy. AC Syn.  
1—125 kw. G.E. 125 v. 1200 rpm. 220/440 v.  
3 ph. 60 cy. AC.  
1—75 kw. West. 125 v. 1200 rpm. 220/440 v.  
3 ph. 60 cy.

### D.C. Generators—250 v. D.C.

| No. | KW  | Make        | Speed |
|-----|-----|-------------|-------|
| 1   | 250 | West.       | 1200  |
| 1   | 175 | G.E.        | 700   |
| 3   | New | G.E.        | 1150  |
| 1   | 125 | West.       | 560   |
| 1   | 125 | Allis Chal. | 1150  |
| 1   | 110 | West.       | 700   |
| 1   | 100 | Allis Chal. | 1150  |
| 1   | 75  | West.       | 750   |
| 1   | 75  | G.E.        | 720   |

### A.C. Generators—220, 4000, 440 220 v.

| No. | KW  | Make          | Speed |
|-----|-----|---------------|-------|
| 1   | 125 | West.         | 257   |
| 1   | 450 | Elect. Machy. | 120   |

### Pumps With A.C. or D.C. Motors

| Quo. | Gpm. | Head | Kind  | Make        |
|------|------|------|-------|-------------|
| 3    | 1200 | 300  | Cont. | Worthington |
| 3    | 1100 | 323  | Cent. | Worthington |
| 3    | 1000 | 336  | Cent. | Worthington |

## DUQUESNE ELECTRIC & MANUFACTURING CO. Phone MOntrose 1-5800

### RELAYING RAILS

2,000 tons of 60 lb. first class Relaying Rails at greatly reduced prices delivered your destination

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**Rails**  
NEW AND  
RELAYING  
Track Accessories:  
• Prompt Shipments  
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• Trackage Specialists  
*from 5 warehouses*  
**L. B. FOSTER CO.**  
NEW YORK — PITTSBURGH  
CHICAGO — HOUSTON  
Address the Foster Office Nearest You

## READY TO SHIP

### D.C. Motors—230 volts H.P. Make RPM Type 1 175 G.E. 550 MD

### SAVE OVER 50% ON NEW BLOWERS AND VENTILATING FANS AXIAL FLOW VENT. FANS

- 1—4000 cfm, 6x3" stat. pres. Sturtevant with 4/1 h.p., 1750/150 rpm., 220/3/60 motor.
- 2—4000 cfm 3" stat. pres. Sturtevant 2 speed AC Motors.
- 2—2000 cfm 3" stat. pres. Sturtevant 220/440 v. AC Motors.
- J1—6000 cfm Sturtevant Bul. No. 512389, 3" stat. pres., 7 blade dir. con. 5/1.5 hp. 1765/1175 rpm., 220/440 v. AC West. TEFC Motors.
- 2—6000 cfm Sturtevant 1.65" stat. pres. 220/440 v. AC Motors.
- 1—7500 cfm Clarage 7½ hp., 220/440 v. 2 speed motor.
- 2—12000 cfm 3" stat. pres. Sturtevant with dir. con. 10/3 HP. 1775/1180 rpm., 220/440 v. TEFC Motors.

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200—1½ ton Hand Cranked ration 27:1 thru an enclosed double reduction gear unit with 4 planetary gears mounted on steel plate complete with 48" of ¼" cable, ratchet type brake, push button release.

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100—Brand New with 1½" cable, 1½ and 2 ton A.C. or D.C. Motors.

### COMPRESSORS

1—315 CFM Ingersoll Rand Portable, 100 lbs. pres. driven by 105 HP Waukesha Oil Engines. 860 rpm.

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#### 100 KW. Diesel Engine Generator Sets

11—100 KW., 250/275 v. D.C. Delco Generators dir. con. to 150 H.P., Model GBD-8, 5½ x 7, 8 cyl. Superior Diesel Engines, electric starting with muffler, power panel and accessories.

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Warehouse: CHARLESTON, W. VA.  
KNOXVILLE, TENN. PORTSMOUTH, VA.

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Any Size Any Track Gauge  
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Greensburg Pennsylvania

ADVERTISE YOUR USED OR  
SURPLUS EQUIPMENT IN  
THIS SECTION OF COAL  
MINING FOR QUICK SALE

## SALEM "HERCULES" AUGERS FOR ELECTRIC DRILLS

Made To Withstand High Drilling Speed, Whip And Torsional Strain Of Electric Drills



Drills holes faster—Will not snap off shank or chip points—Outlasts four or five ordinary augers.

THE SALEM TOOL COMPANY

SALEM, OHIO, U.S.A.

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APRIL, 1950

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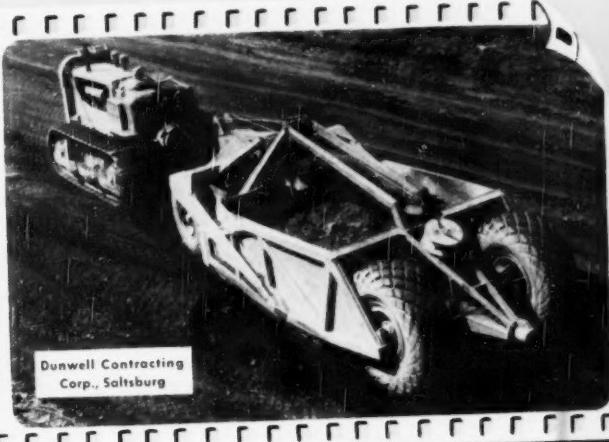
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# HD-19's step up stripping speed!

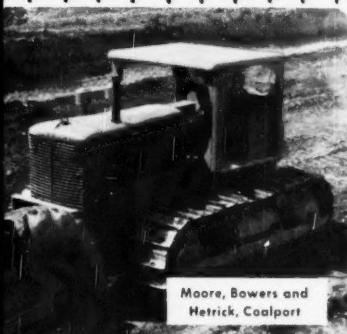
On leading strip jobs throughout Pennsylvania, you'll find steadily increasing numbers of Allis-Chalmers HD-19 Diesels . . . sold and serviced by Highway. Because it's rugged and tough . . . built to outproduce and outlast, the HD-19 is the perfect tractor for all stripping work.



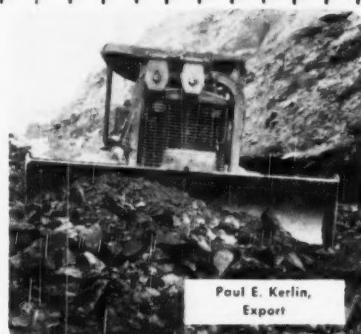
Diamond T Stripping  
Co., New Milford



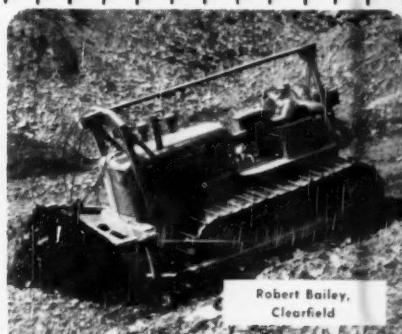
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Paul E. Kerlin,  
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Nord Engineering &  
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*Highway* EQUIPMENT COMPANY

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